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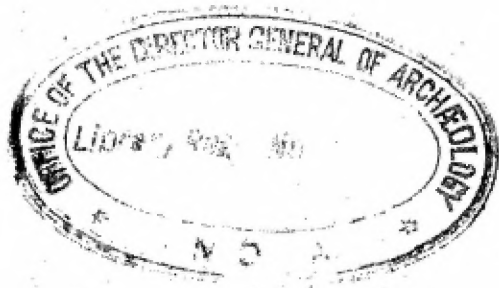
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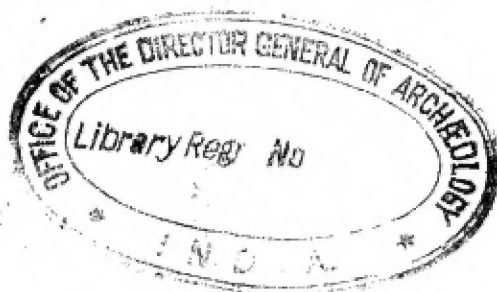
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GREEK BUILDINGS  
REPRESENTED BY FRAGMENTS  
IN THE BRITISH MUSEUM







GREEK BUILDINGS  
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BY W. R. LETHABY



DIANA'S TEMPLE AT EPHEBUS

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## DIANA'S TEMPLE AT EPHEBUS.

*"London has long possessed the finest collection of both the larger and smaller works of art from Greece and Asia Minor, but Lord Elgin could not carry off Homer's sun, rocks, and seas."*—BAEDEKER'S "GREECE."

### INTRODUCTION.

IT is impossible to understand any architecture from books alone, and this may be even especially true of the great works of Greek art, for they are not so much seen immediately as through a veil of traditional explanations, commentaries, and theories which are probably in great part a formal grammar applied long after the time when the architecture flourished as a living language. The British Museum, which is the richest collection of representative fragments of great classical buildings in the world, furnishes us with an invaluable means for looking directly at, and measuring the very stones wrought by Greek artists. In it are stored large and significant fragments of the Parthenon, the Erechtheum, the Propylaea, the Temple of Niké Apteros, and of that which once stood by the Ilissus—all in Athens; of the great Temple of Diana at Ephesus, and of the Mausoleum of Halicarnassus, the two most famous buildings of Asia Minor; also of the Temples of Bassae and Priene, and of several important tombs, from the prehistoric work of Mycenae to the late Nereid monument brought from Xanthus.

Of these, the Temple of Diana and the Mausoleum can only be properly studied in the Museum, which contains practically all the wrought stones of them which have ever been discovered. I propose first to examine the Temple of Diana.

The several phases of architecture are usually classified as Antique and Classical, or Mediæval and Gothic. We are apt

to accept the idea that there is some opposition in these, but this is not necessarily the case, although, of course, there is diversity. In a large degree all architecture is one, in that it is the work of men shaping materials according to their powers and desires; Greek and Gothic architecture resemble one another in both being what I may call primary styles; while Roman art in much, and Renaissance art still more, were consciously derived, and are secondary.

### THE DISCOVERY.

BEFORE the discovery by Mr Wood of the long-buried site, the Temple of Diana was chiefly known by its reputation as one of the Seven Wonders of the world, and from a few short notices by ancient writers. According to Vitruvius, it was Ionic, dipteral, octastyle, and had a cedar ceiling. Pliny says that it was of the enormous and impossible size of 425 feet by 220 feet, that it had 127 columns, the gifts of kings, and thirty-six which were sculptured.

Falkener, by the publication of his work on Ephesus in 1862, in which he brought together many of the references to the temple contained in the ancient books and offered a conjectural restoration, must have generated the interest which led to a search for the site being undertaken in the following year by J. T. Wood. It was not until 1870 that the site was identified, and as the plain on which the temple was built had been covered by some 15 feet of alluvial deposit, and not one stone remained above-ground, the discovery was a triumph for what long seemed a forlorn hope. He was helped by an inscription now in the British Museum, which shows that the temple was outside the Magnesian Gate.

In 1877 Mr Wood published his popular account, restoring the plan from indications found, as having eight columns at the ends, twenty on the flanks of the outer row, and one hundred in all. In the accounts collected by Falkener the temple is said to have been rebuilt many times, but in the main remnants of only an earlier and a later building were discovered, and I shall call them the Old and New Temples. Wood speaks of the "last temple," "the last temple but one," and "the last temple

but two," but the only remains he assigned to the middle one were those of a pavement intermediate between the higher and the lower levels. As the site was very low, a raising of the floor was quite likely to have taken place, and we need not infer from it a rebuilding of the temple. The site was practically a marsh, as had been remarked by Pliny. The Austrian survey referred to below shows the floor of the Old Temple 2.70 metres above the sea-level, the New Temple 5.42 metres, and the modern surface 9 metres. (Fig. 1.) The remains of the Old Temple were of mid-sixth century work, and, doubtless, belonged to the temple to which Crœsus contributed. The later temple was of the fourth century, and probably was not completed until after the visit of

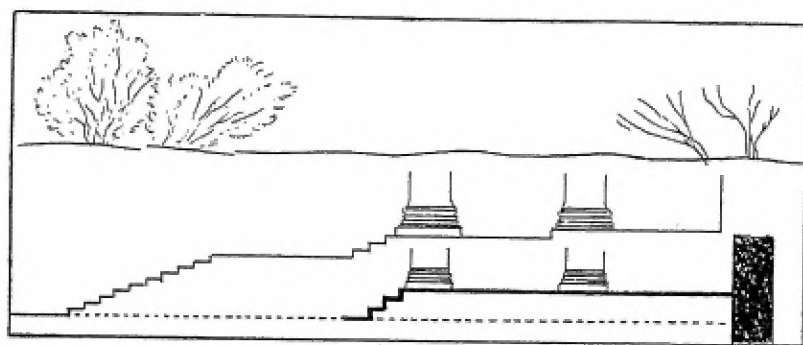


Fig. 1.—Diagram of Levels.

Alexander to Ephesus in 334. We may call them the temples of Crœsus and of Alexander. The site was outside the city to the east at the foot of a range of hills which rose near the back of the east front. The west portico faced the city and the harbour, and possibly for this reason became the chief entrance contrary to the usual custom. It must have been the nature of the site which led to the elevation of the New Temple upon a platform reached by many steps. In building the new structure the old work was only taken down to below the level of this platform; even the bases and stumps of the old columns were left. These were built round about with new foundations, and the cella walls were increased at the sides. The new foundations thus contained a core of the old building, and both were discovered

together. The two temples were identical in size and general disposition of parts.

### THEORIES OF RECONSTRUCTION.

In 1884 Fergusson worked over Wood's materials,\* which had been inadequately published, with the object of showing that places should be found for 127 columns as mentioned by Pliny; and, for this purpose, extended the plan by two or three bays. He had already suggested, from an examination of the marbles in the British Museum soon after they were received, that the square sculptured blocks which Wood had thought were parts of the frieze formed pedestals for the sculptured columns. (Fig. 3.) As there were more than four angle pieces among these blocks it was shown that they could not have belonged to the frieze.† The best result of this paper was that it led to a reply from Mr Wood in which he gave additional and much more workmanlike data with a plan of what was actually found, and sections of the steps and platform. (Figs. 2 and 14. ‡) This plan also contained facts obtained in a further examination of the site made in 1883-4.

The walls of the cella were here completely traced, with the basis for the great image in the midst. The foundation of one of the antæ and of one column on each side are accurately laid down. Further, large portions of great retaining walls which supported the platform are shown on both sides, with cross walls exactly opposite the columns dividing the platform into a network of walls (it was so also at Pergamos), and giving a columniation of 17 feet  $1\frac{1}{4}$  inch along the flanks. At one end, however, two bays of 19 feet 4 inches were found, and at the other end, and in the right place in regard to the antæ, the first of a similar pair of bays was found. It was evident that the two bays at each end were made wider in preparation for the very wide columniation of the fronts. Long portions of the bottom step of those which surrounded the platform were found *in situ* on one

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\* See *R.I.B.A. Journal*, 1883-4.

† Newton's "Essays," 1880; "Ionian Antiq.," vol. iv.; and Dr Murray's "Hist. of Sculpt."

‡ From *R.I.B.A. Journal*, 1883-4. Reproduced by permission.

side and one end.\* The supplementary facts given in this paper were enough to prove that there were twenty columns on the flanks (outer row) and eight at each of the ends, and that a bottom step surrounded the outer row of columns at a distance of about 40 feet from their centres, at least on the sides and one end, and presumably the other. Some valuable detailed sections were also given, but in these what was found and what was conjectural interpretation were not sufficiently distinguished. (Fig. 2.)

Working over the evidence has convinced me that the network of walls spoken of supported a raised platform reached by continuous flights of steps, surrounding the colonnade.

Wood says that he ascertained that the inner row of columns had no square plinths.

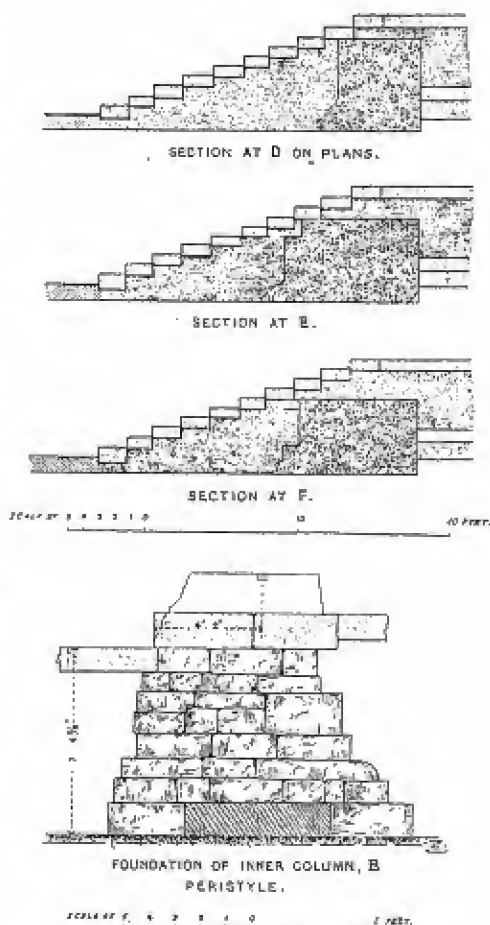


Fig. 2.—Sections of Steps along Sides (compare Plan, Fig. 14), from Wood.

\* In his MS. letters at the British Museum, Wood, in 1873, says: "We have come across a short length of step at the east end, of the same width as the side step . . . it is 116 feet from the centre of the column *in situ* on the north side."



"I found," he says, "a few inches of the front of the step which was here substituted for the plinth. The step under the base was also in two pieces."\*

I here add a few points derived from the volume of 1877. The marble pavement of the Old Temple was about 7 feet 6 inches below the level of the peristyle, which itself was about 9 feet 6 inches above the court. The plinths of the first temple were 7 feet  $8\frac{1}{2}$  inches square, those of the New Temple were 8 feet 8 inches.† "The masonry which supported the steps, with the piers which united the masonry with the foundation piers of the columns, was of courses of limestone about 8 inches thick, which was about the height of each step" (p. 191). The square sculptured blocks were found at the west front. (Fig. 3.) Fragments of marble roof-tiles were discovered, which showed that they must have been of large size, as the rounded covering pieces were about 10 inches wide. A fragment of an acroterion was also found at one end. The temple rose in the middle of a paved court, surrounded by a stoa or colonnade. In one place a portion of the pavement remained against the outer step. In November 1873, a plinth of the stoa was found on the south side nearly 31 feet beyond the lowest step; it was 25 feet wide. Seventy feet away from the steps on the south side lay a Doric building parallel to the stoa, parts of four of its columns were found and of the wall beyond. The columns were 2 feet 6 inches in diameter, and 20 feet 6 inches apart, opposite the alternate piers of the stoa, which were marble and square. Still beyond was a high and strong parabolus wall enclosing the whole precinct.

Some time before 1895, when the late Dr Murray read a paper on the subject before the Institute of Architects, an essay at piecing the fragments together had been made by him at the British Museum. His main points were the following:—

1. He finally demonstrated that the sculptured blocks certainly made pedestals, each composed of four stones.

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\* Like the plinth of the outer columns he evidently means. I feel a doubt as to this step instead of plinths.

† This dimension is, I think, slightly excessive. I should say 8 feet 7 inches bare.

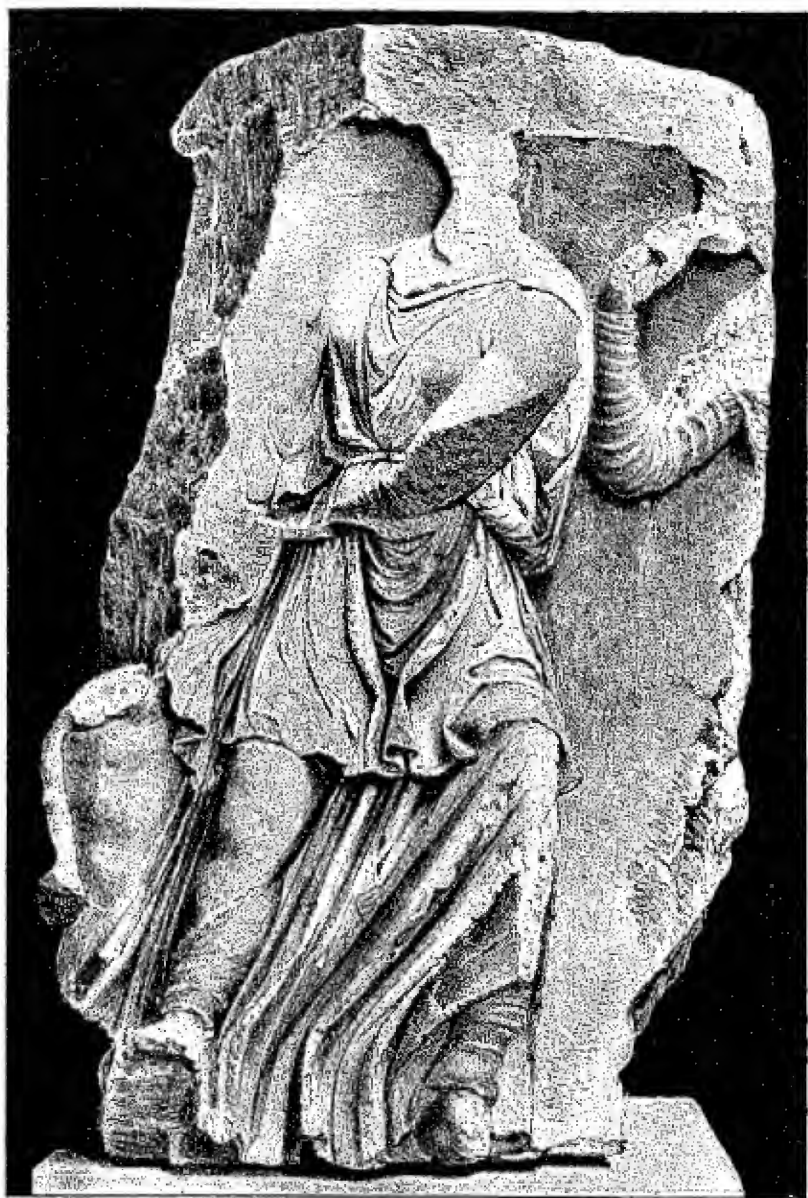


Fig. 3.—Part of Sculptured Pedestal, from Wood.

2. Pointing out that a circular line on their upper surfaces would just take one of the sculptured drums with its roll moulding at bottom, he endeavoured to prove that this arrangement, which had been suggested by Fergusson and adopted at the Museum, was the only possible one. "So far as I can see, there is no escape, much as it may be desired, from bringing the sculptured drums directly down on the sculptured pedestals as we have done in the Museum."

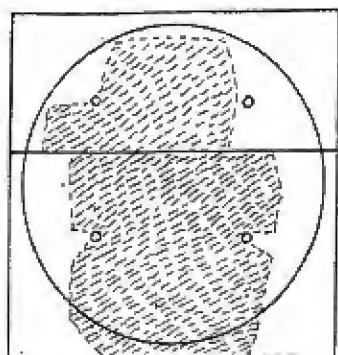


Fig. 4.—Plinth of Column.

3. He maintained that a low square block made up of two stones found beneath one of the ordinary columns was cut so as to show that it "joggled" into other stones, and must have been part of a stylobate, instead of, as Wood had said, a plinth block under the base. "The [circular] base itself" (Dr Murray says), "directly above the joggles, has been in a careful manner cut into as if to receive a metal railing." According to Wood, he adds, this was one of the inner bases, but as a railing here would serve no purpose, Dr Murray thought that the base must have belonged to the outer row. Figs. (4, 12, 13.)

4. Dr Murray took over Wood's general plan, which gave a hundred columns, eighteen at each end, making up the thirty-six sculptured columns of Pliny. He proposed, however, a great modification of the steps and platform, in

3. He maintained that a low square block made up of two stones found beneath one of the ordinary columns was cut so as to show that it "joggled"

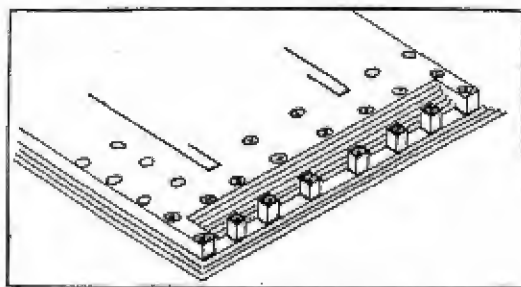


Fig. 5.—Dr Murray's Restoration of Steps in Portico, after Choisy.

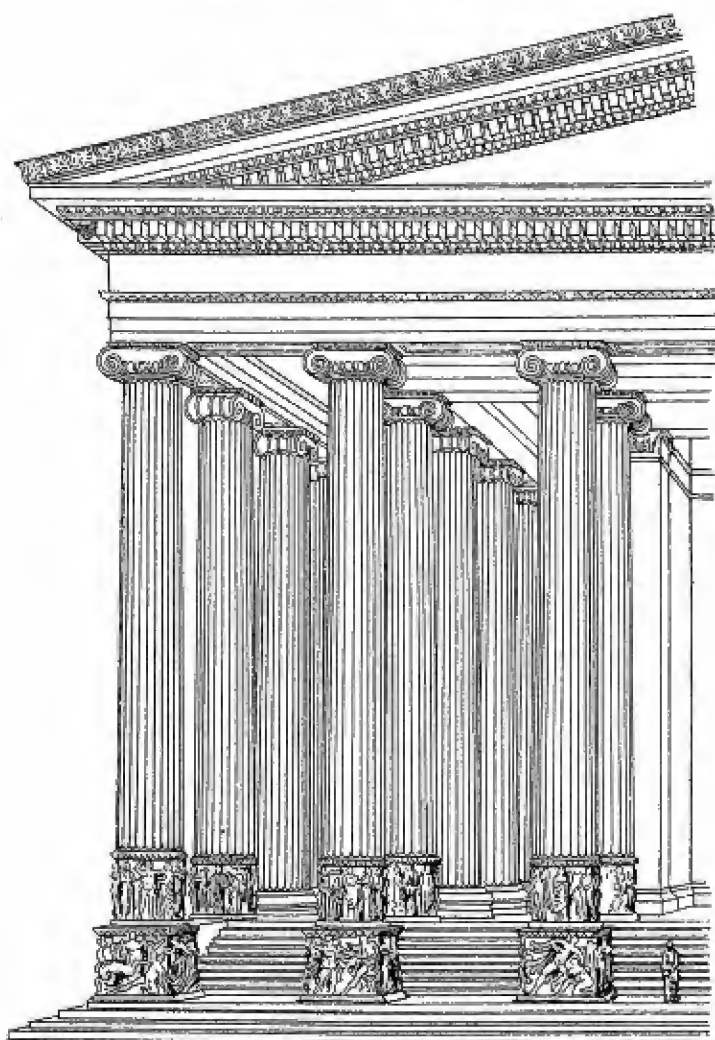


Fig. 6.—Dr Murray's Restoration of Portico, from a drawing by Mr Cromar Watt. From British Museum Catalogue, by permission.

order to find a place for the sculptured pedestals at a lower level, beneath the sculptured drums. For this purpose he pushed the steps into the porticoes behind the pedestals at the two ends, and, doing away with steps altogether on the

flanks, he here substituted a continuous stylobate. (Figs. 5, 6, 7, 11.)

5. One of the drums is in bolder relief, and is, he says, 3 inches more in diameter than the rest. He placed it at the angle, and said that the increase of diameter "implies a proportionate increase of height." That is in the drum itself, I suppose.

#### FURTHER EXCAVATIONS.

In the spring of 1905, Mr D. G. Hogarth made a further examination of the site, which is the property of the British Museum, and gave some account of the results obtained in the *Times* for 8th August of that year. He agrees that the Croesus temple was exactly like its successor in size and arrangement. Below its level were found remains of a still earlier temple, small, in three divisions, and without any peristyle; in the centre was the basis of the cult statue. The site and the fragments found were carefully measured by Mr Henderson. It is most desirable that the publication of these should not be delayed.\*

In 1906 was published a most careful Austrian survey of the site by the Vienna Institute. This confirms Wood's plans as to the position of the fixed points laid down on them, but revises them by sweeping away the cross walls between the antæ and the door, and in carrying the columns right back in the deep pronaos as at Miletus. This plan shows the retaining wall with cross walls to carry the platform, and, as described by Wood, the foundations of two more columns at the south-west angle; also indications of the foundation of one of the columns in antis. (Fig. 7.) It confirms Wood as to the position of the base now in the British Museum. The great foundation, about 20 feet square, for the statue is shown exactly in the middle of the cella. A restoration is given of the west door, the jambs of which were about 3 feet 6 inches wide, and inclined inwards. An excavation was made directly to the west of the English site on the axis of the temple, and several inscriptions and tombs were found.

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\* Since writing this I find that a large work on the Old Temple is in the press, and may appear before this short account, which has the New Temple for its subject.

The Austrian Survey concerned itself principally with the archaic temple of the sixth century. Of the Hellenistic temple of the fourth, the authors report that only one stone still remains *in situ*; "its form, however, could not have deviated in any important way from that of the Old Temple. One will not be able to proceed thoroughly to reconstruct it, following the suggestions of Murray, and the few of its architectural members which are still to be found on the spot, until all the materials gained in Wood's excavations have been properly drawn and published." I wish I could make good this want, but for us,

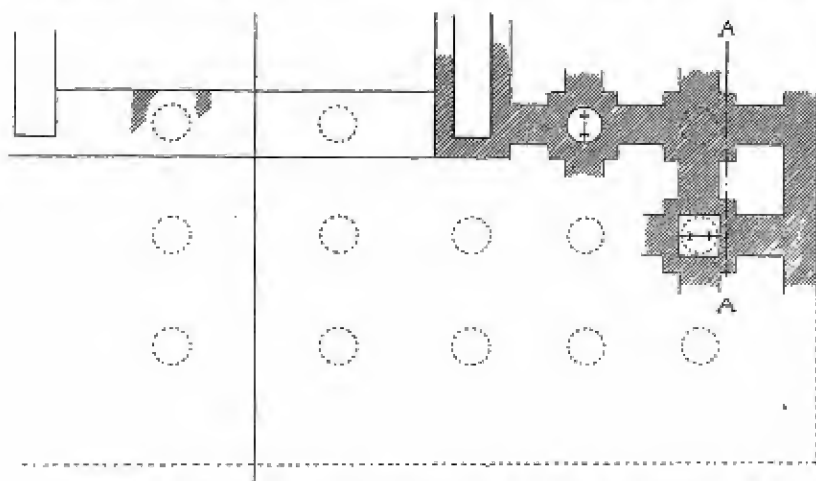


Fig. 7.—Data for West Front. A A shows line required by Dr Murray's Scheme.

fortunately, the actual stones are published in the Ephesus Gallery of the British Museum.

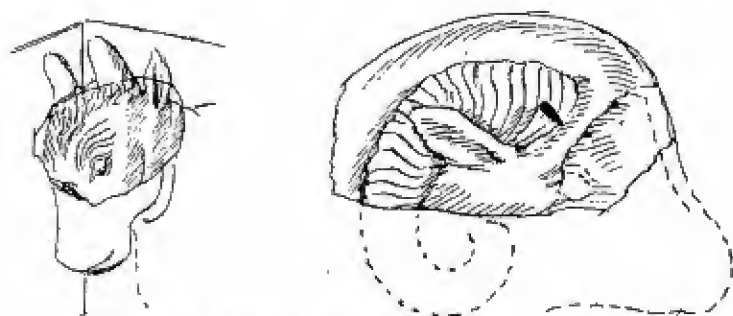
### THE OLD TEMPLE.

Chersiphron, the architect mentioned by Pliny, was one of the architects of the sixth century temple, and when the writer says that so many columns were the gift of kings, it is probable that this also applied to the Old Temple, as we know that columns were given to it by Cræsus,\* and the middle of the sixth century

\* Herodotus, i. 93.

was more the age of kings than was the fourth. Its reputation as a world's wonder must go back to the earlier date when it was more without rival than at any other time. Herodotus, speaking of the labyrinth of Egypt, says that all the works of the Greeks cost less than it, "though the temple in Ephesus is deserving of mention, and also that in Samos." It is probable, therefore, that Pliny's whole account was a tradition as to the Old Temple. As we have seen, it was exactly the same size as the New Temple; like it, it had architraves of great span and columns with sculptured drums and others with square blocks.

The old cella walls, Wood says, were 6.4 thick, of marble, and remarkable for their finish; one block is shown at the



Figs. 8 and 9. (Not to the same scale.)

Museum (the masonry added at the sides for the New Temple increased the foundations to 10 feet wide). The columns were about 5 feet greatest diameter; the shafts above the sculptured drums were probably monolithic, and one of the purposes of these drums was to shorten the length of the single stones. There are restored capitals and bases at the Museum; the abacus is very long and narrow, not square as in later capitals; it is thus a corbel-capital. Amongst the débris of the temple some ox heads were found. Dr Murray, writing to the authors of the volume on Miletus, said, "they seem to me to belong in some way to a capital of the Old Temple." The square attachments suggest rather to me that they were engaged in square piers, such as the antae. See Fig. 8, which, however, is doubt-

ful, as I saw the fragment only for two minutes in the Museum cellars. Another fragment is a ram's head, catalogued as belonging to the New Temple, but of similar work. (Fig. 9.) The bases had various profiles in detail while agreeing in the larger parts. Dr Murray, giving no plinth to the new order, has withheld this feature from the old order too, but Wood found one in place under a base, and the Austrian account gives its depth as 0.322 metre—about a foot. The two stones, side by side, of which it was formed, were joined by dovetailed metal cramps. (Fig. 7.) The most remarkable feature is the gutter front so ingeniously restored by Dr Murray. It is so big as to be a parapet, slightly inclined to the vertical plane, rather than a cymatium,\* and the surface is sculptured like a frieze between the lion's-head spouts. There cannot have been another frieze together with such a feature, and the cornice probably approximated to the form of Fig. 10. As mentioned below, the archaic temple was fully decorated with painting on the architectural members and sculpture. This building is of extraordinary historical interest, as in many particulars it set the type for this fully developed Ionic order—or perhaps it would be better to say Ionian order when speaking of the works found on Asiatic soil.

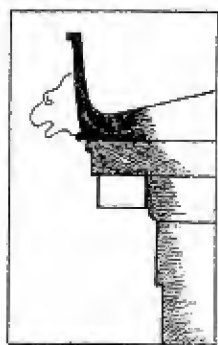


Fig. 10.

#### THE NEW TEMPLE.

The weight of Dr Murray's case, summarised above, rests on the assumption that the sculptured drums *must* have rested on the sculptured pedestals, because on the top of the latter are traces of a circular setting-line suitable in size. When we realise that the ordinary fluted columns are of exactly the same diameter, and have an exactly similar torus moulding at the bottom, and ask why *they* may not have stood on the sculptured pedestals, we open up an alternative solution which is simpler, and, I think, more likely on its merits, apart from the fact that

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\* It probably derives from one of the archaic terra-cotta gutters.



the former seems to be impossible having regard to the evidence. Dr Murray discussed and dismissed the possibility of fluted columns with deep bases standing on the pedestals, but did not consider the obvious possibility of the same columns with the torus only, being placed exactly like the drums.

Choisy, in adopting Dr Murray's scheme, allows that the disposition was unusual to the Greeks. I must think that such unnecessary complication was foreign to their ideals, and that the irregularity on the flanks would have been most marked and awkward in having three varieties of bases in succession. (Figs.

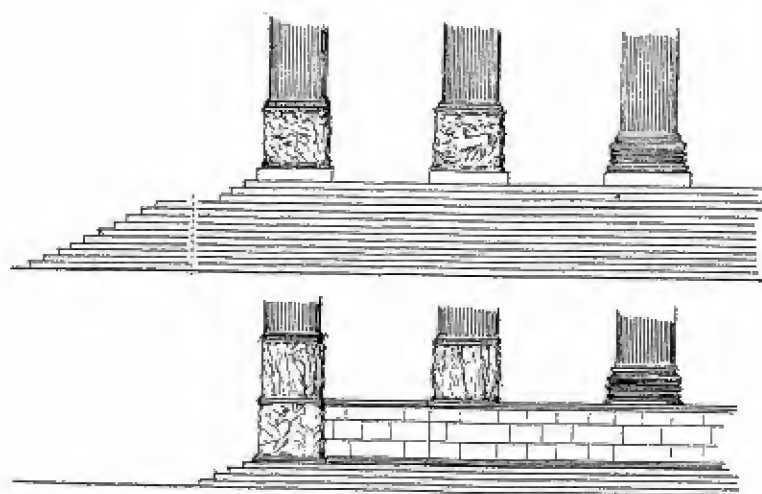


Fig. 11. Proposed Restoration and Dr Murray's Scheme below, flank view

6, 11.) It is very awkward also to have the steps sloping down against the sculptured pedestals without any flat space between. The primary idea of the platform seems, as we have seen, to have been to lift the temple above the marshy site; allowing the principal columns to start from the lower level is opposed to this. As only a part of the columns were sculptured, it seems unlikely that some of them would be doubly decorated, making, indeed, a total of fifty-two sculptured portions, which would have sufficed exactly to surround the whole temple. There seem to have been both square sculptured stones and drums in the ancient

temple,\* and Dr Murray would bring those also together—"the old sculptured columns," he says, "may have rested on square sculptured pedestals." But the Old Temple was not raised on a high platform, and the different columns must have stood on the same level.

Other later Ionian temples stand on platforms reached by continuous steps. The Smintheium stood on a platform proportionately higher than that of Ephesus. At Miletus was a



Fig. 12.—Base, as discovered by Wood (Fig. 14, C.)

temple which, in many respects, was a companion work to the Artemision. The full account of the latest excavations on this site, published in 1904, shows that it was almost the same size and had a continuous flight of steps entirely surrounding it. The columns at the two ends were different from the others in having ornamental bases (not drums).†

\* See B. M. Catalogue, Vol. I., No. 32.

† The height of the platform was about the same as at Ephesus. At the Smintheium there were eleven steps, at Teos six.

Coming now to the crucial objections to Dr Murray's scheme I would point out that it involves the implication that Wood, who explored the site for four or five years, misread plain evidence as to the steps and bases surrounding the temple. He himself appears to be mistaken in saying that Wood had stated that the Museum base and plinth came from the inner row. In Wood's paper in the *R.I.B.A. Journal*, this base is carefully drawn, and lettered "Foundation of Outer Column

of Peristyle"; and in his book he gives an accurate lithograph of the base stones as found and set up in the British Museum, and describes them properly as from the south flank. (Figs. 12, 14.) This point is of little consequence, except that it relieves Wood of having made this mistake. Murray wanted the base to be on the outer row, and Wood had, in fact, stated that it came from that position. But the exigencies of the heights, to make it possible to get in the sculptured pedestals where Dr Murray suggested, required that he

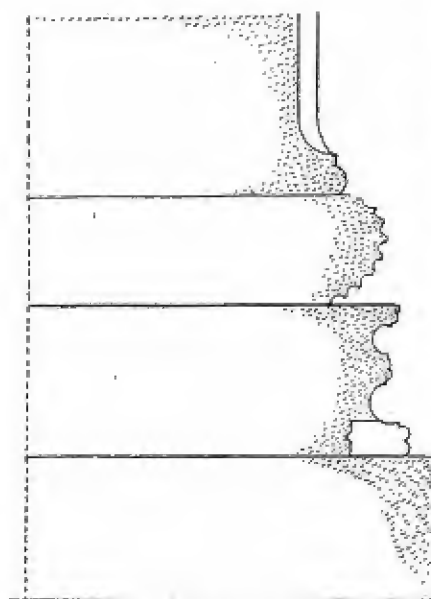


Fig. 13.—Section of Base.

should get rid of any plinth blocks under these bases, and prove that what Wood had said was such a plinth should be part of a continuous stylobate. (Fig. 13.) Such a view can in no way be brought into harmony with Wood's detailed section,\* which shows a rough stone foundation pier under the bases projecting 2 feet beyond where Dr Murray's thesis requires a continuous fair marble wall face. (Fig. 7.) That this

\* *R.I.B.A. Journal*, Fig. 163.



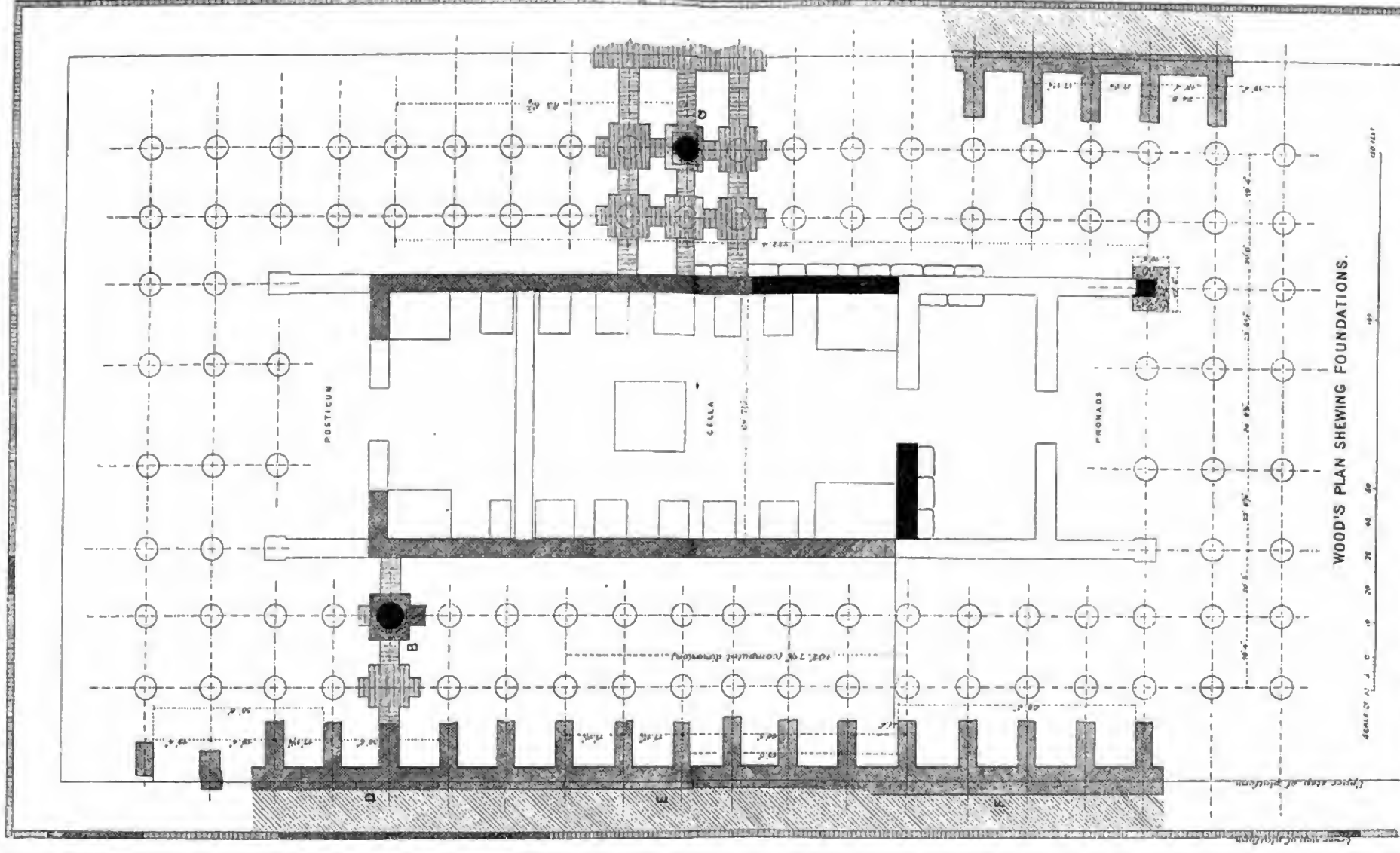


Fig. 14.—Plan of the Temple of Diana, from Wood's Paper, published in the *Trans. of the Royal Inst. of British Architects*, 1882-3.



was a rough square pier projecting, as said, is confirmed by the accurate Austrian Survey, so that we may venture to say that there was no continuous marble stylobate such as suggested by Dr Murray in opposition to Wood's data. Secondly, the theory requires the sweeping away of the network of foundations which supported the steps and platform outside the columns, which are carefully shown on Wood's plan

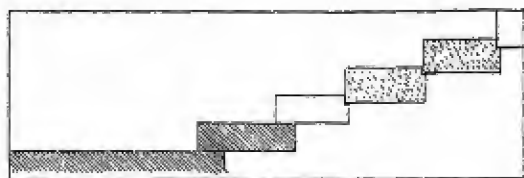


Fig. 15.—Diagram of Steps.

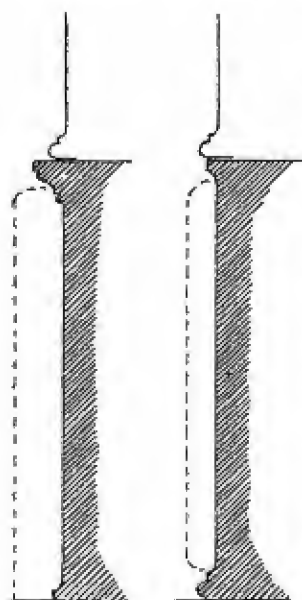


Fig. 16.—Pedestals and Drums of Columns compared.

and sections\* (Figs. 2, 14), and confirmed by the Austrian Survey. Thirdly, Wood found the bottom step of those which surrounded the platform about 40 feet out from the centres of the columns on the north and east sides. Dr Murray had no use for this, and it became a single step in the middle of the narrow space of court which surrounded the temple, and between it and an enclosing colonnade. Now, there are three portions of steps actually at the British Museum, and each one shows plainly that it was followed by at least another step. The only step that Wood speaks of finding is the outer one, and one of those at the Museum must be a part of it; probably the widest one, which, however, shows by a fixing line that only the normal size of  $8\frac{1}{2}$  inches by 22 inches was exposed. The others are 22 inches wide and deeper than  $8\frac{1}{2}$  inches, but the surplus was fitted into a notch in the step below each. (Fig. 15.)

the surplus was fitted into a notch in the step below each. (Fig. 15.)

\* *R.I.B.A. Journal*, Figs. 164, 165, 166. Our Fig. 2 above.

We are thus compelled by evidence of the building itself to look for another solution of the question of the distribution of the sculptured drums and pedestals. Measurement of the stones at the British Museum shows first, that the bottom of the fluted columns are exactly the same size as the sculptured drums (Wood says that both are 6 feet  $\frac{1}{2}$  inch); secondly, that the pedestals and drums are of the same height (6 feet); and thirdly, that the pedestals are about the same size across as the diameter of the drums. (Fig. 16.) I say *about*, because there is nothing which exactly fixes their size, and, as set up at the Museum, they vary from 6 feet 1 inch to 6 feet 2 inches. I suggest, therefore, that the outer row, at one end or both, had the square blocks ranging at the same level with the sculptured drums. I believe the blocks were all found at the west end.

On the supposition that we must provide for thirty-six sculptured columns we get rid of any which were doubly sculptured. As the returns would have square pedestals on the outside row as well as the fronts, we get only two varieties of bases on the flanks as shown by Fig. 11.

#### THE ORDER.

I have carefully examined the base at the British Museum, and can see no sign that the stones which Wood called a plinth made part of a continuous course.\* Except the one plain face in front all the rest is broken. Such internal data as can be gathered are all in favour of the blocks having formed a plinth. It was bolted to its foundation by four bolts, three of the holes for which remain, and one of these touches the angle of a fracture, which Dr Murray read as a joggled joint. Such a bolt was, of course, put through the solid stone. (Fig. 4.)

These holes really conditioned the fracturing of the stone, or rather the bolts did, for it is clear that the plinth has been roughly yet purposely broken so that the metal might be extracted—a usual phenomenon at ancient ruins. The question of a railing as suggested by Dr Murray hardly touches the point, and I do not doubt that there may have been a railing.

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\* The plinths of the Old Temple were also in two stones.



but the 8-inch by 4-inch cavity sunk about 10 inches into one side of the base seems to me rather a mending of the lower member than the fixing mark of such a railing. (Fig. 13.) Reasons for the stones having formed a plinth, besides these, and Wood's testimony, are the facts that the size, about 8 feet 7 inches, works out to half a columniation as at Priene and Miletus, and the whole base resembles those of the companion works just named.

With the plinth the height of the base is two-thirds of a diameter, a fair proportion ; but, without it, it is impossibly low.

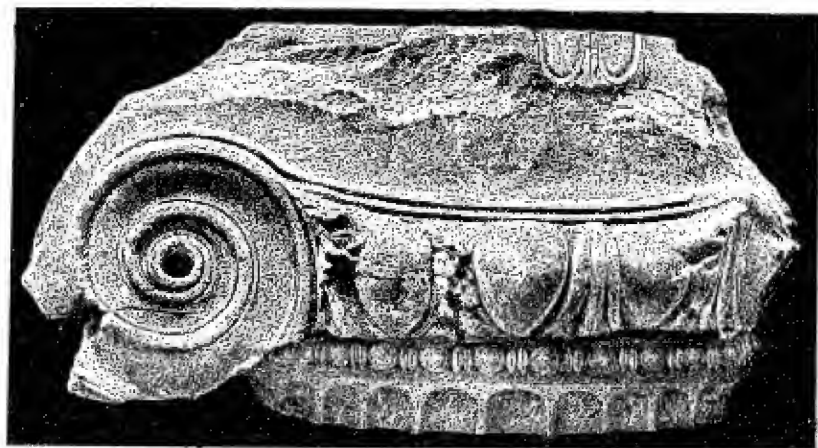


Fig. 17.—Capital of Column, from Wood.

Of the columns the bottom diameter is 6 feet  $\frac{1}{2}$  inch, and the top diameter is 4 feet  $9\frac{1}{2}$  inches, about four-fifths of the lower dimension. Wood noticed that the columns decreased rapidly towards the top, which is also a characteristic of the columns of the Mausoleum. The distance from centre to centre on the flanks was 17 feet  $1\frac{1}{2}$  inches—this is nearly the same intercolumniation of  $1\frac{1}{2}$  diameter,\* used at Priene ; the Mausoleum seems to have been about  $1\frac{3}{4}$ , and Miletus was  $1\frac{1}{2}$ . The exact spacing was settled by that of the old Temple of Diana, but the plinths

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\* Rayet and Thomas. Intercolumniation—the clear space.

to the bases and the spaces between them seem to have been equal squares as at Priene and Miletus.\*

The noble capitals seem to be the parent examples of the whole later Ionian group. (Fig. 17.) The extreme dimension is about 8 feet 7 inches—the same as the plinth block; its height is about half a diameter over the volutes as at the Mausoleum and Priene. The faces of the volutes are not vertical, but lean outward toward

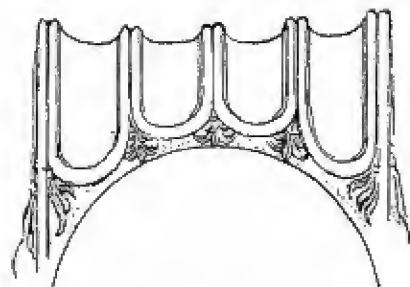


Fig. 18.

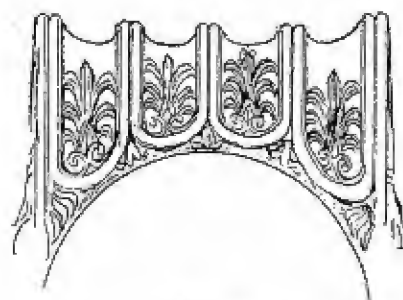


Fig. 19.

Volutes of the Capitals.

the top. The rolls of the volutes at the sides are divided into four large flutes,† the bottoms of which are filled by palm-ettes. (Figs. 18, 19.) Cockerell drew a capital almost exactly similar at Sardis which he said was the most beautiful he had ever seen. The abacus is not square, but about 9 inches longer in the direction of the epistyle. In front of the capital are three enormous "eggs" of an egg and tongue moulding which at Priene and the Mausoleum became continuous, the eggs being the same in number as the flutes of the column. This is clearly a development.

The columns of the inner row seem to have been a little less in diameter than those outside. It is true that Wood says that the inner columns were of the same diameter as the outer ones, but

\* "This plinth," say Rayet and Thomas, "is characteristic of the Ionic order of Asia Minor as found at Priene, Ephesus, the Mausoleum [this only inferred], and at Miletus."

† This is derived from Old Temple.

on his section he figures it as 4.2 from the centre of one of these columns to the face of the step or plinth which carried it, that is 8.4 instead of 8.7 across. He also says that these inner columns had thirty flutes instead of twenty-four, according to a custom which Vitruvius mentions. Dr Murray says: "We possess two capitals which differ in size, and have assumed that the smaller belonged to the inner row." On the smaller capitals there is also a variation in the design, the palmettes come between the ends of the flutes of the roll of the volute, instead of at the ends of the flutes as in the larger capitals. (Fig. 18.)

Wood's account of the greater number of flutes on the smaller columns is not borne out by the portion of the smaller column erected in the Museum. The flutes are only about  $\frac{1}{4}$  inch less in width and were twenty-four in number.

As to Dr Murray's fifth point, the drum with higher relief, which he suggested formed part of the angle column, Wood measured it as 3 inches less in diameter than the rest. Murray, in calling it larger, must, I think, have included the projection of the sculpture. It is much inferior in style, and is bedded in its height. I suggest that it formed part of the inner row between the antæ.

Of the entablature, Wood found several fragments. The architrave was 3.10 deep. What looks like a joggle-joint in the Museum fragment is probably a saw cut made by Wood. There is some difficulty as to this architrave. Its soffit is panelled, and supposing, as we must, that this panel was central on the surface, the total width would not have been less than 6.3. As restored, the margins are narrowed so as to give a soffit of about 5.3. On the evidence we must suppose that the architrave overhung the abacus by 2 or 3 inches. The abacus was so very narrow at the Old Temple that we may easily suppose that the architrave projected over the capitals, and this may have been carried over into the New Temple. There exist also in the Museum portions of two separate rows of egg and tongue mouldings and a length of the sculptured gutter, but no part of a frieze was found.\* As the Catalogue states: "Of the

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\* The eggs and tongues are  $13\frac{1}{2}$  inches from centres, and 12 inches high: the gutter cyma was over 2 feet high.

moulding above the architrave and of the frieze nothing remains." I believe that they never existed, and that the entablature was of the traditional Ionian form which Choisy calls "the Architrave Order."

We must turn to the order of the Temple of Priene, which obviously much resembled Ephesus, and where the carved gutter, as will be shown, is a copy of that, to elucidate this point. When it was explored by the Dilettanti Society we are told that here again no moulding was found which would have occupied a place above the architrave, and although the order had been restored with a frieze until quite lately, the latest German researches show that it, the great altar to the east of the temple, and the second temple were all examples of the architrave order. The authors

of the work cited \* say that "the temple, in fact, did not have a frieze, but, instead, directly above the egg and tongue moulding, which crowned the architrave, lay the powerfully projecting dentil course." These Priene entablatures are now set up in the Pergamos Museum. The dentil course resting on the architrave is the essential part of the earlier Ionian entablatures.

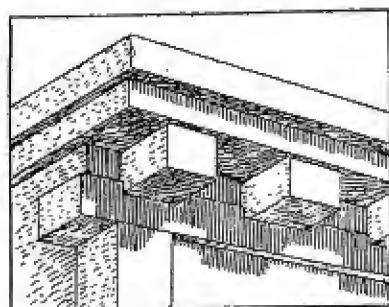


Fig. 20.—Ionic Cornice.

A fragment of a cornice from Xanthus in the British Museum consists of a representation of a row of round poles, set close and far projecting, carrying a band. The two Lycian tombs have cornices made up of an architrave, a row of projecting blocks, representing ends of timbers, and a plate above of two facias. This type of cornice, consisting of architrave, dentils, and corona, is general in the Lycian rock tombs. (Fig. 20.) Choisy has pointed out that this is the true Asiatic (Ionic) type. At Athens, he says, dentils are only known at the Caryatide porch, and there, again, there was no frieze.† At Miletus a frieze of sculptured

\* Wiegand and Schrader, "Priene," 1904.

† Both exist on the small and late choragic monument.

scroll decoration appears, but it is of the Roman epoch. At an earlier time the tradition of the architrave order was so firm in Ionia that the Nereid monument in the British Museum, which in much seems to derive from Athens, has figure sculptures on the architrave but no frieze. The late colonnade of the Zeus altar at Pergamos still has no frieze, nor have the Sidon sarcophagi.

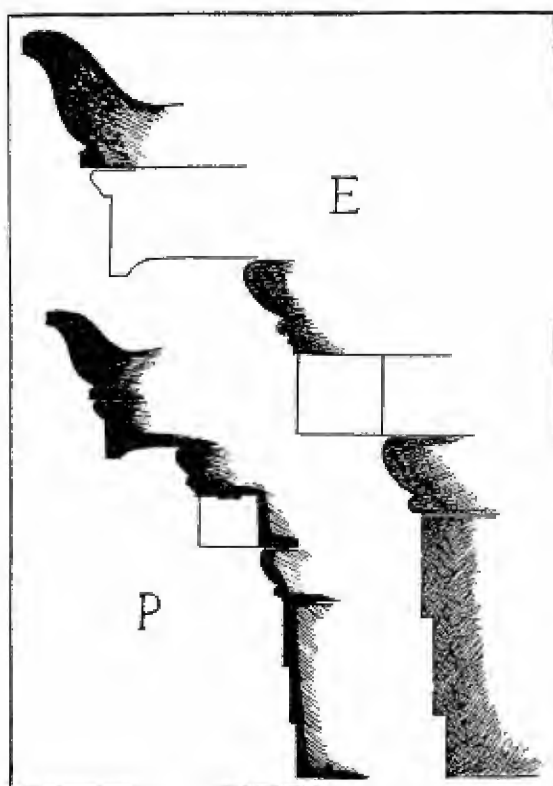


Fig. 21.—Entablatures of Ephesus and Priene compared.

In Fig. 21 I have laid down the entablature of Priene and the fragments from Ephesus to the same scale, following the proportion of the former where we have no other guide. The result gives an entablature of about 11 feet deep, and of practically the same proportion to the whole order as at Priene. At

that temple the columns were at least  $8\frac{1}{2}$  diameters high, the dimension calculated by Cockerell, or nearly 9 diameters, the height arrived at by the German explorers from the masonry of the antæ. The lesser proportion for Ephesus would give a column of 52 feet 4 inches, the greater of about 54 feet, and a total to the top of the cornice of about 65 feet. The greater dimension may, I think, be accepted. Wood proposed 55 feet for the column, and at Miletus the proportional height is still greater.

The Mausoleum, a famous companion work to Ephesus and Priene, has had its order restored at the Museum with a



Fig. 22.—Gutter, from Wood.

sculptured frieze, although here again fragments were found of only the two usual egg and tongue mouldings, and the whole makes up the abnormal depth of nearly a third of the column, instead of about a fifth. I have no doubt that here again there should be no frieze.

The sculptured gutter stone mentioned above is much broken. (Fig. 22.) It is clear, however, that a lion's-head spout occupied the centres of lengths of about 6 feet. The rest is filled by elegant scrolls of acanthus, of which the upper part is broken away. On comparing it with the Priene gutter, also in the Museum, I find that the latter is a smaller and comparatively poor copy of the Ephesus gutter, so that one can be completed from the other with certainty. It is all the more certain, therefore, that both entablatures were alike. (Fig. 23.)\*

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\* The second temple at Priene had another copy of the same gutter.

There are at the Museum two stones of the slabs, 8 inches thick, which cased the pediment. In Dr Murray's restoration he has given dentils to the raking cornice, but this is most unusual, if not unexampled. At Priene they were omitted, and the band which took their place was less in depth so as to lighten the raking cornice. The "acroterion" found by Wood, and now at the Museum (it is not set upright), is much too small in scale to have surmounted the pediment. A series of

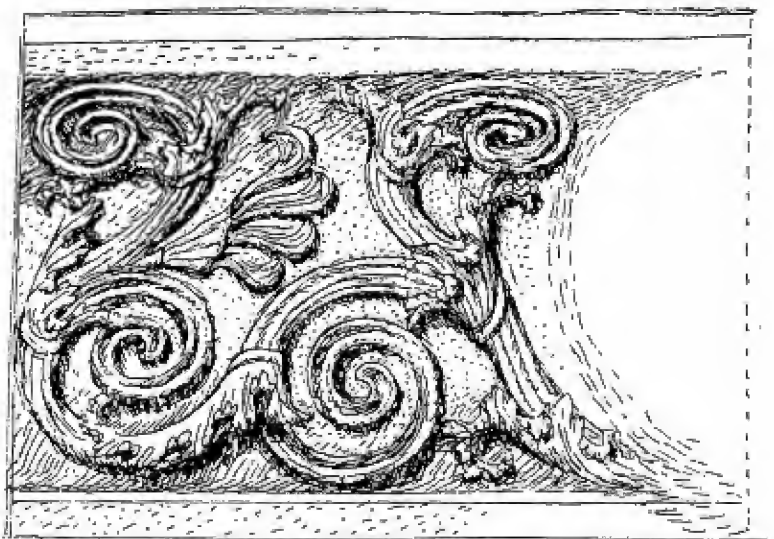


Fig. 23.—Restoration of Gutter.

them may have furnished antefixæ along the top of the gutter,\* but it seems to me to be later in style than the rest. (Fig. 24.)

#### THE PLAN.

Wood's published plans refer to the New Temple. From his text we find that he discovered the positions of at least two of the ancient columns at the west end which are not laid down on his plan. This is what he says: "At last we found part of

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\* As on the Sidon sarcophagi.

the base of a column . . . and in position a large square block of marble which proved afterwards to be the plinth stone of the base belonging to the more ancient temple. . . . The size is 7 feet 8½ inches, while that of the plinths of the last temple is 8 feet 8 inches, but the position appears to have been identical." This was in December 1870. On the following February:

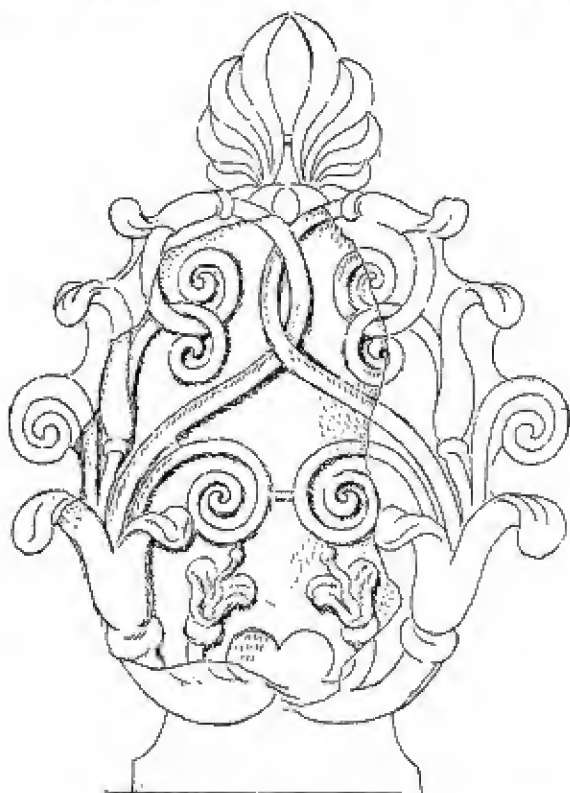


Fig. 24.

"The fine base of one of the columns on the south flank was discovered in position . . . this base is now re-erected in the British Museum. I had now two certain points, viz., the plinth stone of the base near the *western end*, and another near the centre of the south flank." (Fig. 7.)\* By reference to the recent Austrian

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\* Pp. 174, 176.



Survey it is clear that the plinth first found was that of the second column back from the angle on the south side, an important point. Again, on p. 267, he says: "We found in the west front the plinth of a column of the Old Temple as well as part of the base of one of the inner columns, consisting of the plinth and lowest circular stone." The former of these is probably that first mentioned, the latter is shown by the Austrian Survey to be that directly to the south of the south-west anta. "The position of these points," he says, "corresponds as nearly as I could ascertain with the columns of the last temple, giving a satisfactory proof that the temples were built on the same plan and of the same size." The Austrian Survey, in addition, gives some slight indication of the position of one of the columns between the ante. In another place Wood says: "In January 1873 I obtained particulars relating to the position of the columns at the west end." We can now see how he was able to get the dimensions for the remarkable spacing of the columns of the west front, which he gives as follows: From the left to the centre, 19 feet 4 inches, 20 feet 6 inches, 23 feet  $6\frac{1}{2}$  inches, 28 feet  $8\frac{1}{2}$  inches. This may be compared with the Austrian Survey, which gives in metres, 6.16, 6.16, 7.20, 8.75. These spans are immense; the nearest parallel case was found in the Temple of Sardis, where the openings, following the same order, were 16 ft. 3 in., 17.8, 21.7, 25.4. Wood broke up the cella with an opisthodomos to the east, but from the exactly central position of the great basis for the statue, and from the uniform disposition of certain rough masonry piers along the foundations of the side walls, it seems more likely that the cella was undivided in this way. Such an arrangement would further allow of an eastern door, entering the cella, for even if we are driven to suppose that the great altar and the principal door of entrance were to the west, I can hardly think that there was no central eastern door.\* The Austrians endeavoured to find the basis of the great altar to the west, but without success, nevertheless, they too consider it certain that the temple faced west. Wood concluded that the piers spoken of above were Byzantine, but as they contained fragments of the Old Temple, and were

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\* The temple of the Dioscuri at Naucratis, however, faced west.

spaced pretty regularly opposite the columns outside, it seems more likely that they were internal buttresses to stay the walls against the raised peristyle. The cella was about 70 feet wide; if it were roofed it must have been subdivided. Wood found a curious Corinthian capital "near the cella," and supposed that it represented internal rows of columns. It is described as elliptic on plan, but it is really made up of a pier and two attached half-rounds. (Fig. 25.) It is only 2.6 high, and is of



Fig. 25.

quite late Roman work. Such a capital might belong to an external stoa, or possibly to some small erection about the great image, but it can hardly have formed part of the structure of the cella. I am no believer in much which has been written on hypæthral lighting, but the evidence in this case seems to suggest that the cella was open as at Miletus. The lack of internal foundations, and the immense size of the great basis in the midst (20 feet square, which would well have supported a covered shrine as well as the statue), seem to support this view. Wood also found a drain in the foundations of this basis, which he called an altar—"probably for carrying away the water used in washing the surface after sacrifice." There would be plenty of room in the pronaos, treasury, and other parts for the cedar roof mentioned by Vitruvius.\* Save for the seeming need of having a treasury at one end or the other of the cella, I had come to think that columns would be disposed in the space between the antæ walls as at Miletus, and I find that the Austrian plan has set forth this view. With the inscriptions at the Museum are several walling stones.



Fig. 26.

We have seen that the temple court was surrounded by a colonnade; the plan of this is shown by Wood. Of the Doric building which stood beyond it on the south side there is

\* In the MS. letters at the B.M., however, Wood speaks, in 1871, of finding parts of an "internal" column with flutings at upper diameter of  $5\frac{1}{2}$  inches. He thought that the lower diameter might be about 4 feet 10 inches. "This is the second fragment I have found of internal columns." Both were about 45 feet north of the column *in situ* on south side.

a remnant at the British Museum of the triglyph frieze (No. 2,562), 18 inches high. Outside all was the great precinct wall, about 12 feet high, of which Wood gives a diagram. Amongst the fragments are a base of a column 5.6 in diameter (Fig. 26), and a piece of guilloche moulding (Fig. 27).

### SCULPTURE AND COLOUR.

A skilful restoration of one of the sculptured drums of the archaic temple set up by Dr Murray is shown in the Ephesus Gallery. Of the later temple, portions of four pedestals have been pieced together, and on these are set the sculptured tambours of the columns.

The merits of the sculptures are hardly sufficiently recognised. Reliefs so noble in style are indeed difficult to find. The standing figures of one of the columns are obviously inspired by the "Magistrates" of the Parthenon. The seated figures, on the drum of which I have attempted a restoration (Fig. 28), recall the goddesses of the same frieze, and the style of all has affinity with the finest Attic sepulchral reliefs.\* The gracious forms, severe while sweet, and at once broad and detailed in their treatment, follow the

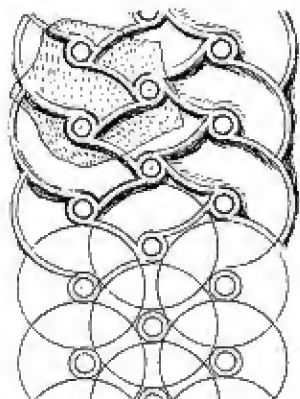


Fig. 27.

high traditions of the fifth century. Their scale is that of nature, and taking this exceptional fact into account, they hold a place amongst the few most perfect architectural sculptures of Greek art. The Hermes has been found copied, as Dr Waldstein has shown, on the silver patera of Bernay. The sculptures of the square pedestals, in higher relief and more violent action, seem to belong to a more advanced school. I suppose that they held the most important place in the front rank of the portico, and that here we find the work or direct influence of Scopas. (Fig. 3.)

\* See Figure in Anderson and Spiers' "Greek and Roman Architecture."

The most perfect group has been explained in several ways but I do not know if its striking resemblance to the group of Hermes, Eurydice, and Orpheus (Collignon,\* Fig. 69) has been pointed out. The latter is said to be a late fifth century work. The Hermes may be compared with that on the grave relief in the British Museum (No. 627), which itself seems to be a copy



Fig. 28.—Sketch of Column, Restored.

of the Hermes of Andros (Collignon, Fig. 201). The noble woman's figure, indicated on my sketch (Fig. 29), slightly restored, appears to me to be so close an adaptation of the famous Eirene of Kephisodotos that we may speak of it as a

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\* "Hist. de la Sculpt. Grecque."

copy of that work. The pose is similar, and the draping is almost identical. The Eirene was wrought about 370; in turn it derived from the Maidens of the Erechtheum (c. 420). Further to the right is the lower part of a seated male figure in the attitude of one of the gods of the Parthenon frieze, and of a figure of Æsculapius from a coin of Epidaurus. This last is a



Fig. 29.—Sketch of Column, Restored.

small point, were it not that the coin represents the famous cult statue; and a bas-relief of a similar figure (see Collignon) from the same place has open-work shoes, which are identical with those on our column. On the left of the Hermes are two superb figures almost complete, and a small fragment of a third which was like one of the magistrates of the Parthenon who lean on

their staves. The parallels to the Hermes mentioned above have been likened to the Hermes of Praxiteles, but our figure has quite sufficient earlier sources (see Nos. 22, 23, 25, and 30 of the west frieze of the Parthenon). Our sculptures, then, are of the Attic school of the transitional period of the first half of the fourth century. Are the seated women three of the Muses? The perfection of modelling and finish may best be judged from an exquisite fragment, being the cheek and side of the head of a female figure (No. 1,239). This lies neglected in a case, and has never, I believe, been photographed. It deserves setting against a background in a glass case.

The remains in the Museum show that the archaic temple was fully painted. The throat of one of the volutes is still coloured bright red, and a leaf pattern around the top of the flutes of the column is painted. In one of the volutes a part of a gilt lead fillet was found. The sculptures of the gutter front and of the bottom drums of the columns were decorated. The hair, lips, and eyes of the figures were painted, and the dresses had bands of palmette and key patterns.

Sufficient was found to show that the New Temple was also painted, even to the bases, one of which was found coloured red in the scotia; and Wood illustrates a small fragment of egg and tongue moulding (Plate X., Fig. 6), which had the ground coloured blue. The use of these colours, bright blue and red, picking out the grounds of reliefs, was the traditional method of coloration in works of this school, and is also found at the Mausoleum and at Priene. Near the temple a fragment of Doric cornice was discovered, showing vestiges of colour, "blue, vermillion, and gold." This probably belonged to the building which stood to the south of the temple court.

#### METHODS OF WORKMANSHIP.

Several of the volutes of the capitals in the Museum have never been completed. One of the capitals is nearly finished on one half, while the other half is only roughed out. It is evident that the capitals were fixed in an unfinished state, and a comparison with other examples shows that this was a general method of procedure. Choisy speaks of the "*ravalement*" after fixing as

general. At the moment of setting, the faces were left rough (*d'ébauché*), only the reliefs were fully sculptured in advance, the rest was finished in place. For a column they marked in the shops the extremity of the flutes at the top and bottom, and the remainder was wrought after fixing.\* The most remarkable example of this procedure is the Temple of Miletus, where unfluted columns, unmoulded bases, and half-finished carvings were found. There is considerable freedom in the Ephesus work. The large capital from the outer row is wrought together with the top of the shaft, the bed being just below the rounded termination of the flutes. The smaller shafts rose to the underside of the eggs and tongues of the capitals, including the astragalos moulding in the more usual way. Neither of these carved mouldings space equally with the flutes, and the latter varies in spacing from  $5\frac{1}{2}$  to  $6\frac{1}{2}$  centres under the same capital.

The Lesbian leaf moulding on the pedestals varies in spacing from  $4\frac{1}{2}$  to  $5\frac{1}{2}$  inches, and is quite sketchy in parts. In the Old Temple intentional variation of parts is as marked as in a Gothic building.

#### DATES AND ARCHITECTS.

There are two records which bear on the date of the earlier temple. We are told that the famous artist Theodorus advised that a bed of charcoal should be laid over the site—a well-known and here very necessary precaution against damp—and that Croesus gave some columns to the structure. These facts would date the foundation as about 580, and the erection of the columns as about 560.

The building of the New Temple is usually dated by the story given by Plutarch and others that the old one was burnt on the night in which Alexander was born in 356. This story, on its face, seems to bear the character of a myth. Falkener pointed out that another date, at the beginning of the fourth century, is given in the Chronography of Eusebius, which contains valuable old material. He accepted both burnings, but it seems more likely that the true date was 395, not 356.† The earlier year

\* "Hist. Arch.," vol. i., p. 276.

† See a long Appendix in the Austrian volume.

agrees much better with the architectural facts. The Mausoleum, which was begun about 353 (+ or -), seems to be considerably later in its style. At Priene, which it is held was begun about 345 and finished about 334, the order is copied even to the gutter, so that the whole height of the immense mass of Ephesus was finished before Priene. The carving of the gutter at the latter is poor, and seems much later than its fine prototype.

According to Vitruvius the temple was begun by Chersiphron of Cnossus and his son Metagenes, and was completed by Demetrius, a servant of Diana (*Dianæ Servus*), and Pæonius, the Ephesian, who, he says, also built the Miletus temple in association with Daphnis. It is generally agreed that Chersiphron must have been a master at the erection of the early temple. Vitruvius speaks of him as contriving machinery for bringing the columns to the site, and of his writing a book, with his son Metagenes, on the order of the temple. Pliny tells a story of his setting the great epistyle. This last certainly could not have been reached in one generation, and it is much more probable that the temple was planned by the master who advised as to the foundations. It is somewhat astonishing to find that the archaic temple was so advanced in style, and so immense in scale. We have seen that Herodotus mentions it along with the temple of Hera in Samos, and the remains of the latter, which have been measured, show that, while in many respects it was similar, it was even larger by a few feet. Indeed, Herodotus himself says in another place: "The Samians have three works the greatest of all that have been wrought by the Greeks. The first the aqueduct, the second the harbour, the third a temple, the largest ever seen, and its architect was Rhœcus, son of Phileus, a native."

Dr Murray has remarked that the resemblance between the early Ephesus capitals and those of the Hera temple is "particularly striking and interesting," because of a recorded connection between the artists who worked at both—Rhœcus, the architect of the Samian temple, and the Theodorus who is associated with him by ancient writers.

According to Collignon, Rhœcus began the Hera temple about 600. Theodorus, who appears to have been younger and



perhaps his pupil, was in full activity about the middle of the sixth century. His work at the Artemision was probably about 580. Rhœcus himself cast for Ephesus the most ancient bronze statue of which there is record; it was called "Night," and was placed at the altar of Artemis. Theodorus was an architect, sculptor, and writer who "possessed all the technical knowledge of his time." The signatures of both Rhœcus and of Theodorus have actually been found on votive works.\*

Recalling again the likeness of the two greatest temples of antiquity, the relation of the two cities, the fame of Samos as the chief art centre of Ionia, it seems more than probable that both temples were planned by those great early masters. Indeed, we may almost say that from no other centre and by no other artists could a work in which sculpture is so integral have originated. We have seen that Vitruvius gives the names of Demetrius and Pæonius as having completed the temple, and this might mean, as has been supposed, that they were the chief architects for the later structure. Strabo, however, says that Deinocrates, the celebrated architect of Alexander—the master who planned the new city of Alexandria—was its builder. It might be held that the conqueror called the master from his great work at Ephesus; but Vitruvius tells another story of his introduction to Alexander, and says that he followed the latter from Macedonia to propose the scheme of cutting Mount Athos into the form of a statue. This itself is perhaps not a very certain story, but if we consider the dates, it becomes certain that Strabo's account is an instance of a big reputation spreading too far.

As to Pæonius, it is said by the last writers on the subject that the Miletus temple, which he is stated to have built, may have been begun as early as 332, but all which remains seems to me much later in style, and taking into account what Vitruvius also says as to the erection of an altar of Apollo (at Miletus) by Pæonius, it seems more likely that the architect of Ephesus is not the same as he of Miletus. Certainly if the New Temple of Diana was begun soon after 395 one master could not have planned the two structures. An inscription found at Miletus,

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\* "Hist. de la Sculpt. Grecque."

with phrases parallel to the *Servus Dianæ* quoted above, clears up one point, and shows by analogy that the Demetrius mentioned above was a slave attached by purchase to Diana's Temple, and proves that a master builder might be of servile condition.\*

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\* Pontremoli et Haussoullier : "Didymes."

GREEK BUILDINGS  
REPRESENTED BY FRAGMENTS  
IN THE BRITISH MUSEUM  
BY W. R. LETHABY

II.  
THE TOMB OF MAUSOLUS

LONDON  
B. T. BATSFORD, 94 HIGH HOLBORN

1908



NOTE.

As this is the Second of the Series of Monographs on GREEK BUILDINGS, the pagination is continued from the first, for convenience of reference when the complete Series is bound.

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## II. THE TOMB OF MAUSOLUS.

*"My eyes have looked on the Wall of Babylon and on the Zeus by the Alpheus [Olympia], and on the Hanging Gardens, and the colossal Helios [Rhodes], and on the high Pyramids, and the gigantic monument of Mausolus, but when I saw the vast Temple of Artemis [Ephesus] soaring to the clouds, the others were all dimmed, for except in Heaven the Sun has never looked on like."—ANTIPATER OF SIDON (c. 100 B.C.) ON THE SEVEN WONDERS.*

### SOURCES AND THE SITE.

IN the British Museum Catalogue of Greek Sculpture, vol. ii., pp. 66 and 67, are set out small prints of eight various restorations which have been suggested for the world-famous Mausoleum at Halicarnassus, together with a good bibliography of the subject. Having been interested in the noble remnants of this puzzling monument preserved in the Museum, I was drawn on to read what had been written on the subject with the hope of discovering that which had been proved in regard to it and what is mere embroidery of conjecture. I propose to review the evidence of the stones themselves, and to bring out the points in what has been written which seem to me most in accordance with the facts.

The main sources of evidence are three—the marbles in the Museum, Newton and Pullan's account of their discovery,\* and a short description by Pliny. As shown by the surveys, the city of Halicarnassus was built around a deep, almost circular natural harbour. It was rebuilt by Mausolus, and his great monument has such a prominent position in the centre of the scheme that Adler is probably right in arguing that it was begun by himself before his death, in 353 B.C. The city is so

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\* Cited below as Newton for text and Pullan for plates.

accurately described by Vitruvius that it almost seems that he might have visited the Mausoleum, which it is clear that he regarded as supreme among buildings. "The site of the city is like a theatre in form. On the lowest part by the harbour is the Forum, on the curve, higher up, about the middle, was a broad street or precinct, in the centre of which stood the Mausoleum, a work so marvellous that it was counted among the seven wonders of the world. In the centre of the highest part of the city was the Temple of Mars, with a colossal akrolithic statue. At the right hand point of the curve was the Temple of Venus and Mercury and the Fountain of Salmacis. On the left horn stood the Royal Palace, planned by Mausolus himself."\*

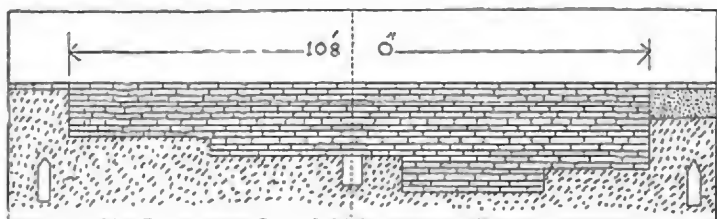


Fig. 30.—The Foundation.

The explorations of Sir C. Newton laid bare the platform of the Mausoleum, which was "cut like a step in the side of the rising hill. . . . It is probable that it was connected with the Agora, which was on the shore of the harbour below, by a series of terraces." The monument stood in a temenos, apparently over three hundred feet square, and within this space, on the south and east at least, there were also terraces. Towards the northern peribolus wall the actual foundations were discovered, in an area which had been excavated out of the rocky platform to various depths, but always with level surfaces. The depth averaged about 10 feet. This space was rectangular, 108 feet north and south by 127 feet east and west. There were some extensions

\* In an account of the site by Covell (c. 1675) he mentions the walls and the fountain (B.M. MSS.).



beyond the general form, and to the west a rock-cut flight of steps descended to the bottom. "The whole of this area had been filled up with the courses of the foundation, consisting of slabs of a coarse green stone, strongly bound together with iron cramps, and generally about 4 feet square by 1 foot thick. In some places as many as three courses of those foundation slabs remained." (Fig. 30.) A still better account of the great foundation is given by Lieutenant Smith in a Government paper describing the excavations. "The cavity appeared like a bed cut out to receive the foundations. The whole of this quadrangle is cut out of the rock to depths varying from 2 to 16 feet below the surface. Where the rock has failed at the sides the line of cutting is continued as a wall. Throughout the area the rock is cut in beds or levels at different depths, caused by the irregularity of the ground." The site seems to have been originally a quarry. This accounts for the irregularities of depth and the extensions beyond the square.

Besides this immensely strong basis, fragments of marble columns and entablature were found sufficient to give data for a complete restoration of an "order," also many fine sculptures, including friezes, and a quantity of wide step-like stones suitable for roofing. The sculptures and architectural fragments are now exhibited in the Mausoleum Room of the British Museum.

The description of the Mausoleum given by Pliny also furnishes important data. It is to this effect:—It was 63 feet on the north and south sides, and shorter on the front. Its entire circuit was 411 (or 440) feet, and the height [of this part?] was 25 cubits ( $37\frac{1}{2}$  feet), around the pteron (peristyle) were 36 columns. Four famous artists wrought the sculptures on the several fronts. A pyramid equal to the lower part in height surmounted the pteron, diminishing in 24 steps to a meta (generally a steep cone or pyramid). On the summit was a marble chariot the work of Pythis (Pythios, the architect), the total height being 140 feet.

Falkener, in an article in the "Museum of Classical Art," brought together one or two other notices. Lucian says: "Nothing is equal to it either in size or beauty. It is enriched with the most perfect works of art, with statues of men and horses of costly marble, such as can hardly be found in temples, so that it

is the perfect model for all tombs." Pausanias also says that its size was great and its decorations magnificent.

It is easy from these accounts to get some general idea of the monument, and before the site had been explored many

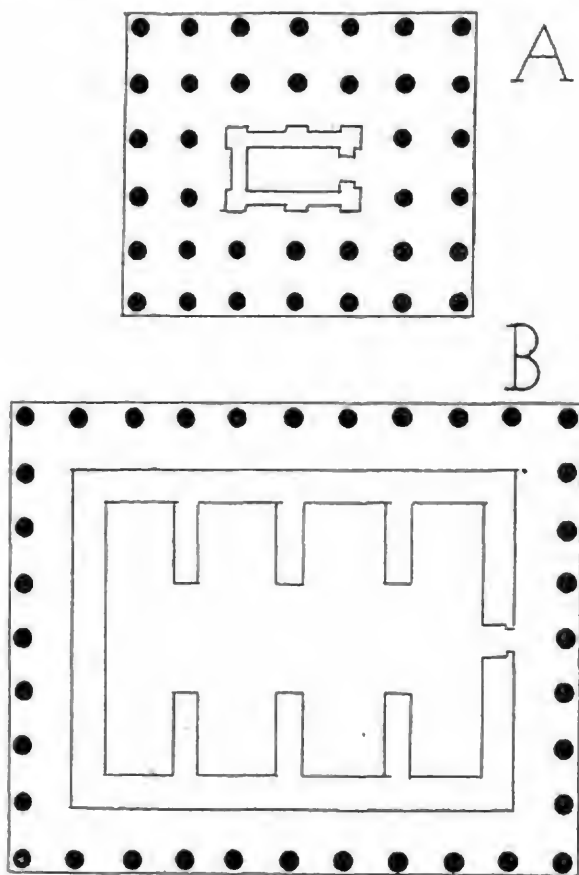


Fig. 31.—Types of Proposed Restorations.

restorations had been suggested. The finds fully confirmed the general good faith and accuracy of the descriptions. One main difficulty of interpretation arose in that sides of 63 feet and shorter fronts will not make up a circuit of 411 or 440 feet, and the restorations fall into two groups—(A) the small plan.

type, and (B) the large plan type. In the type A the 36 columns are arranged in two rows, in the type B in a single row. (See Fig. 31.)

### THE PERISTYLE.

I have felt that it might be possible, by a detailed examination of the order, to obtain data which should offer proofs of one or the other types of restoration proposed; for in the order of the Mausoleum, if anywhere, we may expect an example of systematic relation of parts. Vitruvius tells us how Pythios, its architect, with other contemporaries, gave up the Doric order because of the incongruous arrangements which arose in its use, and how Pythios wrote commentaries on architecture and a special description of the Temple of Athene at Priene, of which he was also the architect, at a later time. Moreover, "Satyrus and Phyteus,\* who were very fortunate," wrote on the Mausoleum itself. The beautiful order of the Mausoleum, says Laloux, was considered to have "particularly happy proportions, and they were copied in the principal productions of the school of Pythios." Adler speaks with less than enthusiasm of the order, but he judged only from poor, dry, and inaccurate prints. The actual stones at the Museum are surely very beautiful.

It is most difficult to get any statement of accurate dimensions of the order. Pullan's measurements, figured on his plates, are acknowledged to be untrustworthy, and the Museum should publish an amended account of the remains. For instance, Pullan gives the small top diameter as 2, 9.65.† The Museum Catalogue says that "the diameter at the top of the flutes is 36<sup>1</sup>/<sub>16</sub>." He gives a flute at the bottom as 4.5 inches; in fact, it is over 5.5. The large diameter he gives as 3, 5.35.‡ In the Museum Catalogue the bottom diameter is not given, but only the sizes of the two top drums.

I have had the advantage of consulting a set of careful, full-sized drawings of this order, made by students of the Archi-

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\* This same Pythios.

† Feet and inches are here written thus: "2, 9."

‡ The mistake must be, I think, that Pullan intended 3.535 feet.

tectural School at the Royal College of Art, under the direction of Professor Pite, and, further, I have found in the British Museum Lieutenant Smith's original measurements of all the drums found on the site, and on which Penrose based his calculation of the height of the order.\* The former gives 3 feet bare for the top diameter, and the latter 3 feet. The lower diameter I find given from 3, 5 to 3, 7 $\frac{3}{4}$ . I estimate it as 3, 6 $\frac{1}{2}$ . These diversities as to the sizes of parts of the column which are actually in the Museum, may be taken as an example going to show on how unsubstantial a basis rest most of the calculations as to the proportions and refinements of Greek architecture. Watkiss Lloyd's most able tract on the proportions of Priene, in the fourth volume of the "Antiquities of Athens," for instance, is worked out with the minuteness of a problem in

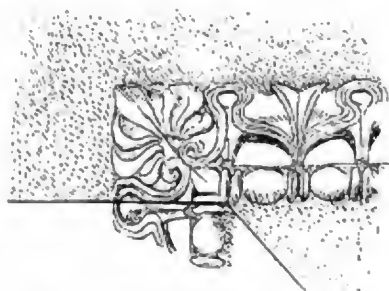


Fig. 32.—Part of Lacunar Margin.

pure mathematics, and the only inaccuracy seems to be in the data on which the calculations are based. The latest German researches show that estimates of the diameters at Priene vary from 1.25 to 1.29 metres, that the height of the column was probably greater than had been thought, and yet that the whole order was much less

than was supposed, because it had no frieze. All this may seem a little confusing on one hand, but on the other it should, I think, relieve the mind of the practical student, who, being accustomed to the rough approximations of modern building, cannot understand these interrelations worked out to the thousandth of an inch.

We come now to the important question of the intercolumniation. At Ephesus, which I look on as the type of a series of works which included the Mausoleum, the intercolumnar space was  $1\frac{5}{6}$  diameters; at Priene it is given as

\* The former will be referred to as "R.C.A. Survey," the latter as "the Memorandum."

$1\frac{1}{4}$  by Pullan, and as  $1\frac{1}{8}$  by Rayet and Thomas; at Miletus, the latest built, it was  $1\frac{1}{2}$ . In all, the spaces between the square plinth blocks were approximately *square*, and this stands out as the most certain criterion. Further, the capitals spread about *half a columniation*, that is, they are about as much on the face as the dimension of the plinth block, and this seems also to approximate to a rule. At Ephesus the abacus is about 7 inches longer on the face than on the returns. At Priene it is nearer square. At the Mausoleum the abacus is square. This fact shows that the intercolumniation in this case was probably less than in the other two. Twice the size that the plinth must have been gives us 9, 9, or  $1\frac{1}{4}$  diameters. This dimension has already been arrived at at the Museum as resulting from the length of some stones of the lacunaria. As to this, it might be contended that the bays were not necessarily square on plan, and this, indeed, was the case at Priene, where square lacunar panels were fitted to oblong bays by means of additional shallow strips of panels. Now, at the Mausoleum there were similar narrow sinkings on the marginal stones of the lacunars, but three or four fragments of *mitres* of these sinkings have been found which show that here they ran all round, and not on two sides only. (Fig. 32.) The compartments were thus certainly square, as in the Museum restoration. This being settled, we have the fact that the margin-stone of one of the lacunaria gives the size of the square panel, and adding to this its own width twice over we again get the same dimension for the columniation (exactly 9,  $9\frac{1}{4}$ ). It is now, I suggest, proved that *the columns stood about 9, 9 from centre to centre.* (Fig. 33.)

In trying to determine the size of the lacunaria we again come up against mistake upon mistake. In Newton's text the lacunar stone is said to show that "the exact size" of the panel was 4,  $0\frac{3}{8}$ . On the plate, however, it is figured as 4.285, which is about 4,  $3\frac{1}{4}$ . In the Museum Catalogue the dimension is correctly given from the stone, but it is said that Pullan's plate is wrong instead of the text. I speak of this as some revenge for the awe I used to feel for these elaborately figured dimensions. The bases of the columns, as set up in the Museum, from the indications of the setting lines, gives a projection quite different from Pullan's version, and the bottom diameter is about 4 feet  $10\frac{1}{2}$

inches, or, as has been said, the plinth would have been one-half the columniation.\* There is a final proof of the dimension obtained for the columniation. According to Pliny the ends of the structure were shorter than the sides. It is manifest that this means that they had one or two columniations less. Now, the difference between 108 feet and 127 feet, the size of the foundation, almost

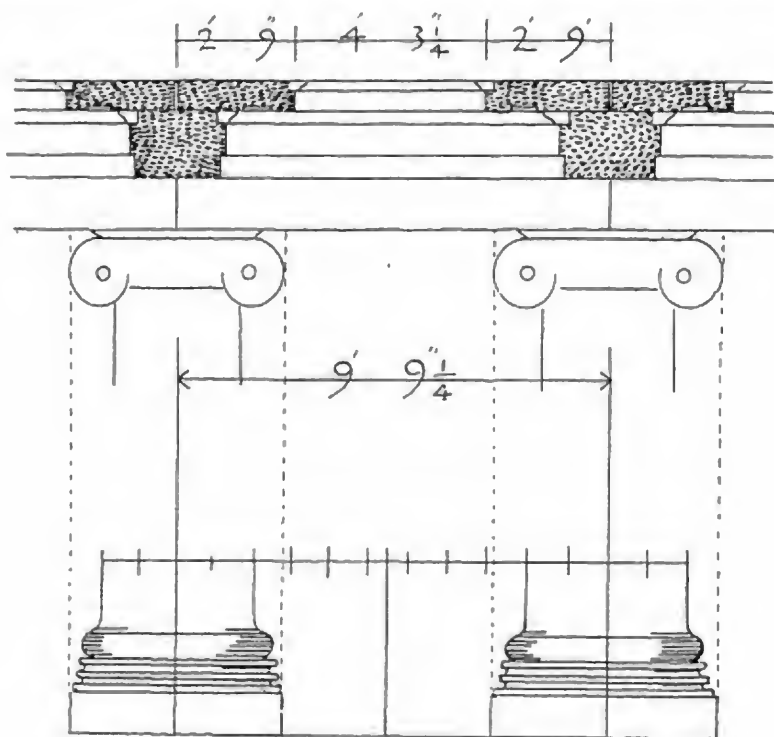


Fig. 33.—Dimensions of Columniation.

exactly equals two bays of 9, 9. It may now further be stated that *the flanks were two bays longer than the front*.

The 36 columns mentioned by Pliny can only be arranged in the two simple ways described above—either with 9 columns on the fronts and 11 on the flanks, or, less obviously, in two rows, the outside ranks being 6 columns on the front and 7 on

\* Centre to centre.

the sides. (Fig. 31.) But only the former has the proper difference of two bays, and this disposition exactly suits the size of the foundation. In this we have a proof that Pliny's number, 36, is trustworthy.\*

### THE PYRAMID.

The facts known in regard to the Pyramid give further proofs as to the dimension arrived at for the intercolumniation and for the size of the whole peristyle. Many of the "steps" which finished the roof or pyramid of the structure were found. These steps were of two dimensions on the "tread"—17 inches and nearly  $21\frac{1}{2}$ . From 40 to 50 steps were found. "In all cases but two the treads measured 1, 9 or 1, 5;" the two exceptions had treads of 9 and  $10\frac{1}{2}$  inches. It is evident from this that most of the steps were wide. Two angle stones in the Museum show the dimension of  $21\frac{1}{2}$  inches in one direction and 17 inches in the other. If there had been a continuous pyramid of such steps its base must have had the proportion of about 34 to 43 on plan.

It has been computed from the actual sculptures of the chariot group which stood on the summit that it required a platform of about 20 by 25 feet. This proportion is again practically the same, and we may now state that *the whole base of the pyramid had sides in the ratio of about 34 to 43*. This agrees almost exactly with the ratio of eight bays to ten required by the peristyle, and, as will be seen on the diagram (Fig. 34), *the columniation of eight and ten bays must have governed the proportion of the pyramid base*.

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\* Falkener dealt with objections to central columns. Where conditions were free, as in the flanks of temples, an odd number of columns seems to have been preferred. An interesting fact has recently been discovered in regard to the temple of Samos. It was dipteral, with 8 columns on the east front, 24 on the flanks, and with prostyles in front of each end of the cella, giving three rows of columns at the ends. *At the west end there were 9 columns instead of 8 to lessen the spans*. With the columns as described, and four more in the pronaos, we obtain a total of 127, the number Pliny said there were at EPHEBUS. Fergusson pointed out that at the latter the seven very wide spans of the principal front equalled eight of the medium spans, and it seems very probable that at Ephesus, too, the back portico had 9 columns like Samos.





We can again prove this result and arrive at the actual size of the base of the pyramid in another way. The great foundation had a ratio of 108 to 127 feet. This, although still oblong, approximates more to the square form than does the base of

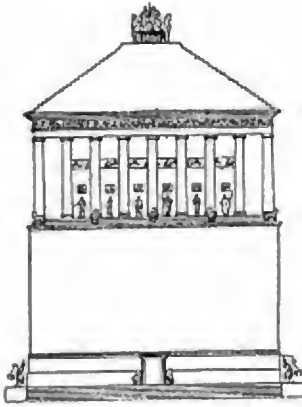


Fig. 35.

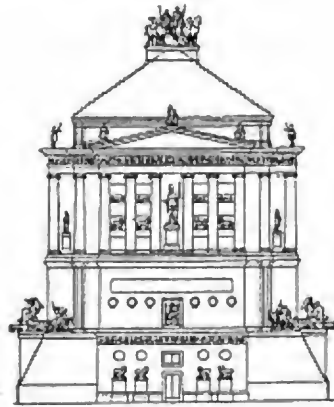


Fig. 37.

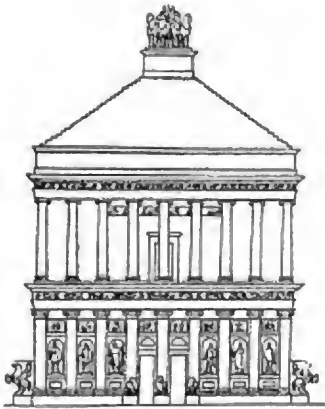


Fig. 36.

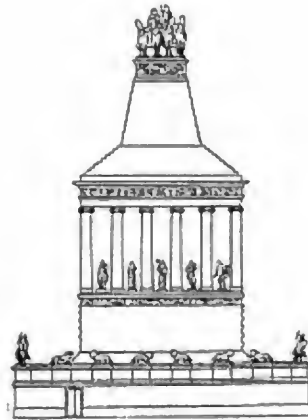


Fig. 38.

#### Various Restorations of the Mausoleum.

the pyramid, just as it should, for the plinths and steps on the ground level would be the same at both the fronts and the sides. Indeed, if from the centre of the foundation rectangle of 108 by 127 feet we draw lines representing the diagonals of the pyramid

having a base of the proportion 34 to nearly 43 (17 inches by nearly  $21\frac{1}{2}$  inches) and now intersect these with true 45 degree mitre lines drawn from the angles of the foundation rectangle, *we obtain geometrically the proper base of the pyramid.* (Fig. 34.)

As some of Pliny's dimensions are corrupt and different in the different MSS., and others are difficult to reconcile with each other, and are therefore doubtful, even the number of columns he gives is subject to the same doubt; but from the three facts made known to us by the actual remains (1. The size of the columniation; 2. The size of the foundation; 3. The proportion of the base of the pyramid) *we may arrive independently at the number of bays, eight on the front and ten on the side*, by spacing up bays of about 9, 9 as close to the limit of the base of the pyramid as possible. When it is found that the line so found for the centres of the columns agrees exactly with the line of the basis of the pyramid, the demonstration is surely complete.

In the diagram, Fig. 34, A B are the angles of a rectangle of 17 inches by nearly  $21\frac{1}{2}$  inches, which was drawn full size. C D are angles of the foundation to scale. At E and F the diagonals and the mitres intersect. This gives the base of the pyramid, and it is found that the peristyle divides up accurately on the same line, giving 36 columns.

Besides the wide steps which have been mentioned, others, but not so many, were found, having treads of  $10\frac{1}{2}$ , 9, and less, as may be seen at the British Museum. A few such narrower steps are required to get in the full number of twenty-four around the pedestal of the chariot group. About sixteen or eighteen wide steps and six or eight narrower ones would suit our dimensions. At the base the first step or attic was doubtless much deeper than the rest.

#### THE CELLA.

The name pteron requires a cella to which it is added.\* Newton pointed out that a fragment of a cross beam which was discovered must have rested on the cella wall, for it was rough for 2 feet at the end. He also writes, "One stone of the cella

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\* See passages cited by Newton, p. 190.

wall was discovered." It had an inclination from the perpendicular of 1 in 100. Dr Murray agreed that the existence of a cella was shown by the marble beam—"this beam has one of its ends roughened to the extent of 2 feet, for the evident purpose of being let into a wall. Had that end rested on

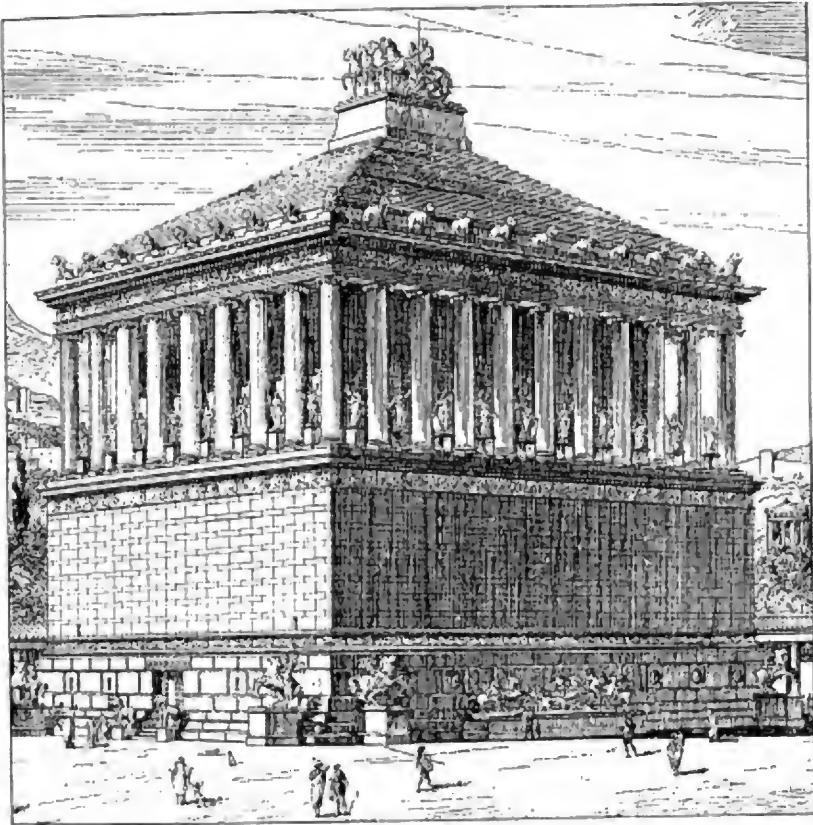


Fig. 39.—Adler's Restoration.

an inner architrave, *as does the other end*, then it certainly would not have been roughened as it is."

#### RETROSPECT.

I must now quickly review what has been written on the question, and try to separate results from unverifiable conjectures.

In the first half of last century, Professor Donaldson had observed many fragments of shafts, capitals, and other ornaments of a "superb Ionic edifice" on the site of Halicarnassus, which he seems to have identified as having belonged to the Mausoleum. In publishing an engraving of a pilaster capital he said: "In general character it is similar to the pilaster capitals of the Temple of Priene and of the Temple of Apollo near Miletus, but the rosettes and torches are additional ornaments, in allusion probably to the rites of the edifice of which the fragment formed a part."\* (Fig. 40.)

In 1846 thirteen slabs of the sculptured frieze were brought to the Museum.

1. With these evidences in addition to the texts, Cockerell made a restoration, and he doubtless obtained from Donaldson some idea of the scale of the Ionic order he had noted. He arranged the columns in a double rank, showing 7 and 6 to the outside (A, Fig. 31), and surrounding a very small cella.†

2. After the excavations Newton and Pullan published in 1862 their results, together with a restoration. While they arrived, as I consider, at the general form of the monument, they did so in rather an inconclusive way. They presented their facts most inaccurately, and made little distinction between them and their own suggestions. The order is not properly worked out. No pedestal is set on the pyramid. The wide span between the cella and the peristyle at the ends is impossible as construction. The pteron, with its cornice about 100 above the ground, is far too elevated for so delicate a work. (Fig. 35.)

3. Fergusson, in the same year, published a study of the monument, in the main following Newton. He put a basis for the chariot group as Cockerell had done, and after the analogy of the Lion Tomb at Cnidus, but introduced many errors and fancies of his own.

4. In 1888 Mr J. E. Goodchild, who had been an assistant to Cockerell, issued a pamphlet, which attempted to show that the discoveries were compatible with Cockerell's "small plan"

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\* "Ant. of Athens," vol. iv.

† Watkiss Lloyd made a slight amendment to the scheme, and this is embodied in the fine coloured drawing of Cockerell's restoration shown at the Museum. This drawing was made by Mr F. Pepys Cockerell.

scheme. He pointed out that some of the beams postulated by Pullan "would not bear their own weight, much less the superstructure." He noticed that beside the wide steps there were others having treads of 9 inches, and of those he proposed to form the pyramid. He worked out the intercolumniation from the margin stone of the lacunar, and showed that was  $1\frac{3}{4}$  diameters. He had Newton and Pullan's wrong dimensions for both the margin-stone and for the diameter, but those hap-

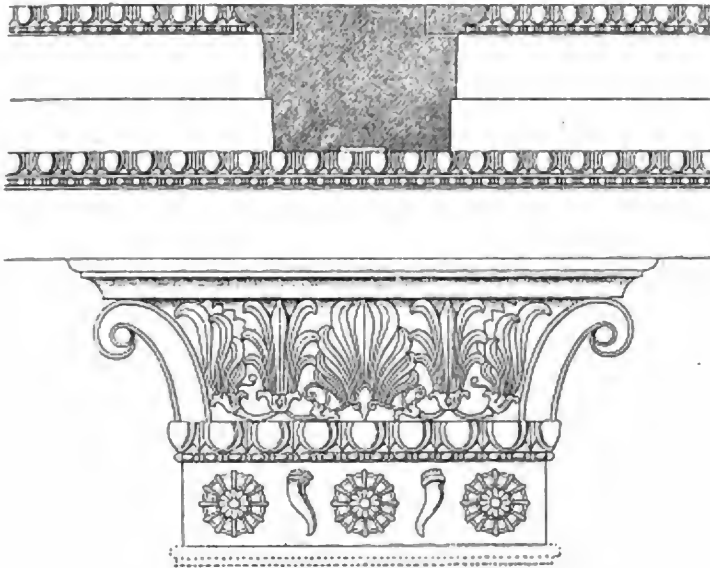


Fig. 40.—Pilaster Capital.

pened to compensate one another in giving a columniation of  $9, 6\frac{1}{2}$ , a result right in principle although wrong in fact.

5. About 1893 the order was pieced together in the Museum, the arrangement following Goodchild rather than Pullan, with some further variations. From the lacunar stones the right columniation, stated to be  $9, 9\frac{1}{4}$ , was arrived at. Dr Murray used certain square sculptured slabs as panels for the lacunaria. An objection may be raised to this on the ground that the panels have not equal margins all round, the margins above the heads of the figures are twice as wide as the others, and the

sculptures are so delicate that they can hardly be seen. The sculptured frieze was inserted in the order. On this see below and Figs. 51 and 52.

6. A German restoration by Petersen and a French one by Bernier have few special points. Both are of the large plan type. The former puts pilasters to the lower storey (Fig. 36), and it is just possible that some such arrangement did obtain, see 11 below. In the French scheme a possible disposition of the lions is suggested, as some method of *pairing* them seems called for, as pointed out by Collignon, who published this restoration (published later and fully by D'Espouy). Petersen's scheme is illustrated in Mr Walter's "Greek Art," 1906.

7. In 1894 Mr Oldfield rediscussed the problem, following Newton's big plan type in the main, but he broke up the peristyle into porticoes, and was thus able to obtain short fronts while retaining the total dimension of 411 feet. If all Pliny's measurements are to be reconciled, this seems the best suggestion of dealing with them, although the attempt in this case was mixed up with many visionary features. (Fig. 37.) Mr Oldfield's scheme was adopted by Professor Percy Gardner in his "Sculptured Tombs of Hellas."

8. In 1896 Mr Stevenson also published a restoration (*Builder*, August and September 1899), in which he reverted to Cockerell's small type plan. He adopted both sizes of steps for the pyramid, and proposed for it a spire-like arrangement, consisting mainly of the steep steps. He swept away the cella, and supported the pyramid wholly on the columns. (Fig. 38.)

9. In the same year Mr Arnold pointed out that some foundations of isolated piers which appear in Pullan's survey offer some confirmation of the large type of plan.

10. In 1900 Mr Arthur Smith published drawings of the order, and surveyed the whole problem in the "Catalogue of Greek Sculpture," vol. ii.

11. In the same year Prof. Adler of Berlin published a monograph on the subject. He follows Newton and Pullan, not only in the general form they arrived at, but in their method of obtaining the size of the plan, by setting twenty-four wide steps around the area where the chariot stood. He adopts Cockerell's and Fergusson's idea of the "meta," and thus lowers the peristyle.

Indeed there is practically a consensus on this point. He re-engraves Pullan's faulty plates of the order, and indeed does not seem to have seen the original stones. His best points seem to be an exhaustive history (in the main again following Newton), suggestions for setting the sculptures, and the presentation of what I must, from what has gone before, consider the best general view of the monument which has been produced. (Fig. 39.) He shows that the doubtful 440 of Pliny is to be preferred to 411 and better agrees with the foundations. His most original contributions are in the disposition of the sculpture, and in recalling that Donaldson had illustrated the pilaster capital as coming from the Mausoleum. (Fig. 40.) He sets such capitals on pilasters around the cella. Cockerell also had used this capital, but he placed it on square angle piers, which, now we have an angle capital, we know did not exist. Adler suggests that this may be the earliest Ionic pilaster capital of this type, but Inwood engraved an example from Athens on Plate 28 of his "Erechtheum," which is clearly of still earlier form.

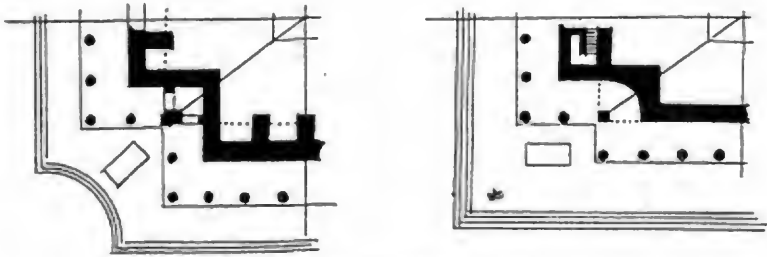
12. In 1905 Dr J. Six published an article in the *Hellenic Journal*, suggesting that many of the sculptures were grouped in pediments over the two "fronts." He followed Adler generally, but increased the attics to receive these features. The existence of two actual angle pieces of the gutter precludes the possibility of pediments filling the fronts as he suggested, and the great horse and rider seem altogether too big to have rested on the thin shelf of such a delicate entablature. Moreover the square support under the middle of the horse shows that it was isolated.\* This learned article goes on to discuss the proportions of the structure, but as Pullan's faulty measurements are used the results cannot be accurate. Dr Six also suggests that Pliny's perimeter of 440 feet should be broken up into sides of 120 and 100 feet. I had come independently to this last probability or possibility as likely dimensions for the top step of the platform. It is also suggested that the columniation may have been set out at 10 Greek feet from centre to centre, but the true dimension is 3 or 4 inches short of this. The whole flank,

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\* There were no sculptures in the pediments at Ephesus or Priene, and Rayet and Thomas point out that they were generally plain in Asia Minor.

however, would appear to have been exactly 100 Greek feet, for  $10 \times 9, 9\frac{1}{4} = 97, 8\frac{1}{2}$ , and adding two half columns,  $3, 6\frac{1}{2}$ , we get 101, 3 English.

As said above, attempts have been made to reconcile Pliny's dimensions in all kinds of ways. Mr Pullan supposed that the 63 feet applied to the cella, and the 411 feet to the peristyle. Mr Oldfield's plan was broken into the form of a cross with very short arms, which gave narrow fronts. This variety we may call the "broken type." Mr Stevenson suggested an inner building small and high, and an outer enclosing building low and large. If I must put forward a possible reading, I would say that as the measure about the *exterior* was 440 feet, 63 feet was the *interior* length of the cella, obviously! Professor Gardner suggests that cxiii. should be read for lxiii., and this



Figs. 41 and 42.—Rejected Plans.

would do very well for the top step of the platform. But none of these reconciliations are so simple in the supposition of that easiest thing a mistake. As Furtwängler says on another subject, "It seems to me better to set aside Pliny's information than to try to combine it with the known facts." In the parallel case of Ephesus, Pliny's dimensions have had to be abandoned. For the Mausoleum he gives the measure of the *long* sides as 63 feet, while his estimate of the total measure round about is either 411 or 440 feet, according to different texts. Which of these last shall be accepted as right? It would not matter much which it was, except that another writer says that it was 1340! However, this last could be made to apply to an outer court, although it is rather like measuring a field for the size of a haystack, and other reconcilers think it is in mistake for 440.



But, again, there are three estimates of height by as many authors—180, 140, and 80 feet. Shall we reconcile all these by supposing that the first is to the top of a flag-staff, the second to the chariot, and the third to the cornice? Nothing final can be done with dimensions like these, all sorts of conjectural restorations are possible, and unless we proceed independently the problem is insoluble. For instance, Fergusson

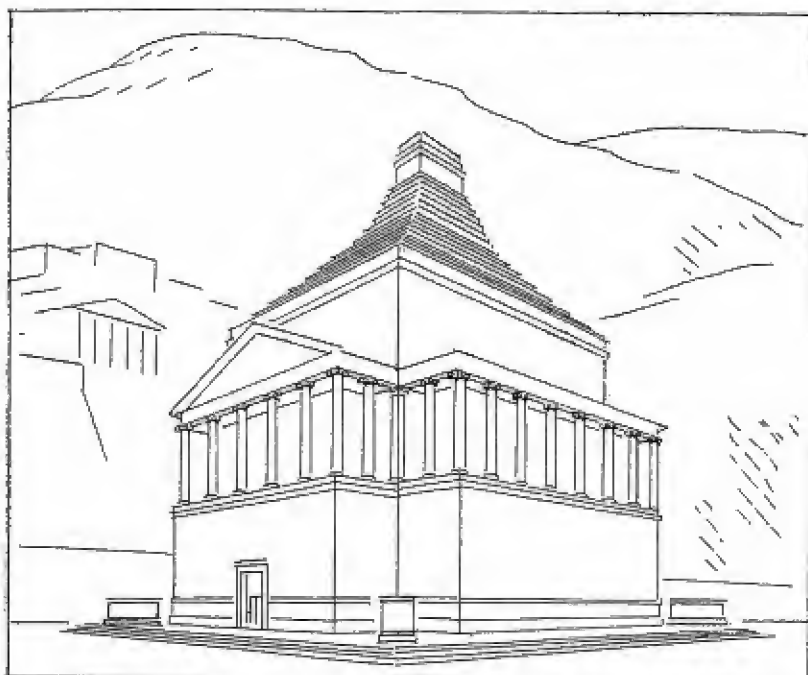


Fig. 43.—Rejected Restoration.

grouped his columns at the angles into threes. Another might suppose that the angle columns, as is so frequently the case, were counted twice over, or another, again, that the 63 feet should be cubits like the dimension of height. On these lines I put on record a rejected hypothesis (Figs. 41, 42, 43) which combines many advantages. The long front has seven bays which at 9 feet each make up the desired dimensions (inter-columniations of  $1\frac{1}{2}$  diameters were quite possible, and the lacunaria need not

have been square except for our proofs). We get pediments at the "fronts" (without sacrificing the gutter returning at the angles, as we know it did). We get the pyramid firmly based on the cella walls. ("Hanging in void air" is rhetoric for high. The dome of Sta. Sophia, although it seemed to be suspended by a golden chain from the heavens rested on very substantial piers and arches.) The measure of 440 feet comes at the edge of a reasonable terrace. We get the proportion of two bays longer than wide to suit the foundations. A central pillar on the front is avoided, and there is room enough for a pyramid made up mostly of the wider steps. Yet the sufficiency of the proof for the simple solution following the large type of plan B (Fig. 31) drives me from such a desirable scheme, and I cannot doubt that the main facts as to the exterior have been established from the data made known by the excavations as above set out.

A great point has been made of Pliny's description of the apex of the monument as like a *meta*, but I have not seen the parallel case of the Tower of the Winds at Athens cited in this relation. This building had a very flat pyramidal roof of marble, and at the centre a finial like a capital, yet Vitruvius describes it as a tower finished with a *meta* of marble ("*metam marmoream perfectit*").

Again, those who would sweep away the cella point to the tomb at Mylasa; but this is very small, of late Roman work, and the form of the columns suggest, that there was a screen between them forming the whole into a cella. The columns were of the shape shown by Fig. 25 in our Ephesus section, and Pars' original drawings show that there were dowel holes in the vertical strips by which it is probable slabs were attached.

The small type of plan seems to me to be an impossible solution for the following reasons:—

1. The pyramid has to be designed as made up mainly of *steep* steps. The discoveries showed that it was mainly of wide steps.
2. The monument would have occupied such a small part of the immense foundation.
3. It would not have been the right proportion of plan to suit a rectangle 108 by 127 feet and to give two bays longer on the flanks than on the front.

4. It would hardly have been "a gigantic monument."

5. The small scheme had its origin before the site had been explored. It is against the views of Lieut. Smith, Newton, and Pullan, whose conclusions were based on their knowledge of the site, of the positions of the stones found, and, in a word, their total impression derived from months of study of the excavations.

6. Such a building would, I think, be historically impossible. The basis of the true design seems to be the tumulus developed, consisting of a basement, a pyramid, and a trophy. It may best be compared with the Cnidus monument; but in later times the great tomb at Adamkilissi, and the "mausolea" of Augustus and Hadrian in Rome followed the same tradition. The marvel must have consisted in setting over a temple-like structure a pyramid hanging high in the air.

The one point that may be claimed for the small scheme—that it satisfies Pliny's dimension of 63 feet—is neutralised by the fact that the large scheme satisfies the 440-feet dimension. And if we are told that this was the size of something exterior to the monument proper, we can say that the 63 feet is just as likely to be of something interior like the cella.

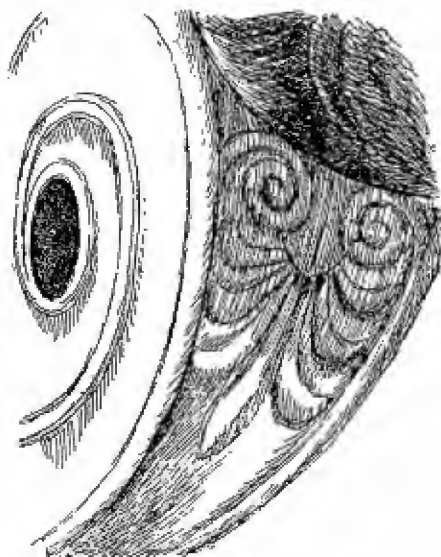


Fig. 44.—Back of Angle Volute.

#### DETAILS OF THE ORDER.

The shafts have twenty-four flutes over 5 inches wide, which are nearly semicircular in form. The projecting hollow moulding at the top and bottom of the shaft is not a quadrant, but

a long, elliptical curve, and the flutes are set into this in a beautiful way. The entasis of the column seems to be quicker toward the top, and Penrose considered that it formed a part of a long hyperbola with its focus some distance above the top of the shaft. The top diameter seems to be one-seventh less than the bottom.

The capitals must be carefully examined at the Museum to

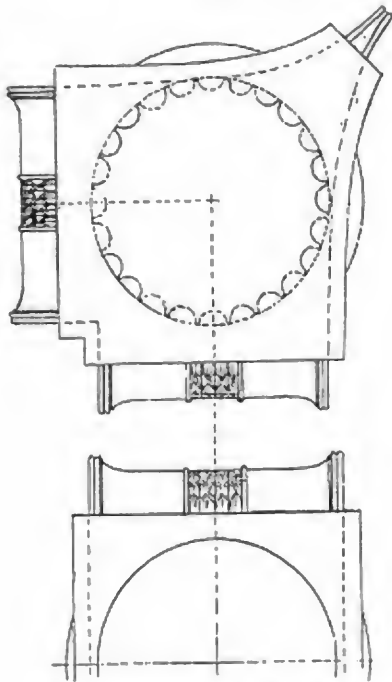


Fig. 45.—Ordinary Capital and Angle Capital compared.

be appreciated. They are almost exactly like those at Priene, of which an example is also exhibited. The height of the cap from the bottom of the volutes is half a diameter. One of the capitals is from an angle, and shows a diagonal volute. It should be noticed that this angle volute is not thrown quickly out from a general square form, but the whole of the two external sides curve outwards, both the cushion and the abacus. The eyes of the volute were sunk out about 2 inches, here and at Priene and Ephesus, and were filled again with marble studs, some of which remain.

Often the studs projected beyond the general face of the volute, and this doubtless furnished the reason why they were separately inserted. The eye space was made use of also, and might be slightly injured in tracing the curve of the volute. At Ephesus the fluted rolls of the volutes were adorned with palmettes. An almost exactly similar ornament is found at the back of the angle volutes at the Mausoleum and at Priene. (Fig. 44.) Doubtless

the angle volutes at Ephesus were exactly similar. The inner angle of the Mausoleum capital was recessed, as a separate fragment shows, so to allow room for the bringing of two volutes together at right angles. At Priene the two volutes of the inner angle were complete. There was not room enough for this on the Mausoleum capitals where the outer revolution of the volute was lost at the mitre. Even to get this much the length of the side rolls had to be reduced on the angle capitals. See Fig. 45, which shows the relative sizes of the two capitals. Figs. 46 and 47 show the mitring of the volutes against the inner angle. Fig. 48 is a restoration of the abacus at this point. Fig. 50 shows the ordinary capital.

As to the height of the column at the Mausoleum, we are told that "Mr Penrose, after a most careful discussion of the dimensions of twenty-six drums measured by Mr Newton at Hali-carnassus, and by those which are at the Museum, came to the conclusion, from the

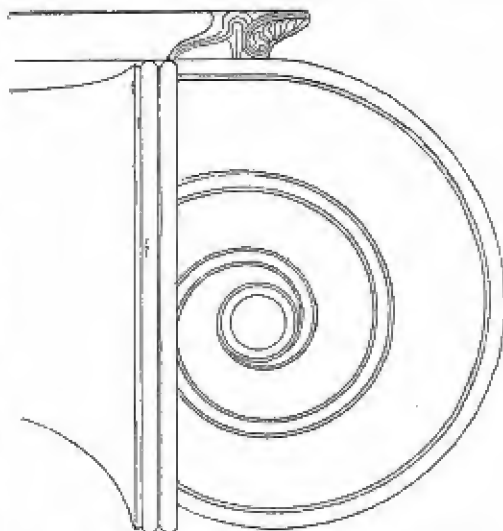


Fig. 46.—Mitred Volute of Angle Capitals.

entasis, that the pillars were  $8\frac{1}{2}$  diameters in height, and consequently within a small fraction of 28 feet 6 inches in height."\* The diameter here accepted is Pullan's wrong value of 3.535. With a more correct value, we get about eight diameters. The memorandum spoken of above is a sheet (in MS. 31980, by Lieutenant Smith?), giving the sizes of all the drums discovered. On it a series of six drums, which agreed most nearly with one another as they diminished

\* "Antiq. of Ionia," vol. iv., p. 18.

upwards, are superimposed, giving a total height for the *shaft* only of 26,  $11\frac{1}{4}$ . This furnishes a maximum dimension, for the drums

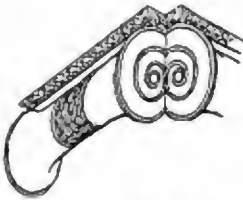


Fig. 47.—Sketch of the Cast.

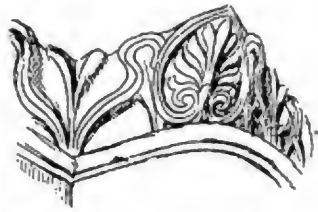


Fig. 48.—Restored Abacus of the Cast.

of the several columns would have varied in their heights, and in the series of drums brought together the upper ones, for the most part, overlapped those next below by a quarter of an inch or so. Making allowance for these differences, I estimate the height of the shaft at about 24, 9. The capital and the base add 2, 6, and the plinth, following the analogy of Priene, would have been 9 inches. This gives a total of 28, 0, nearly 8 diameters, or, accepting Penrose's calculation of 28, 6, we get 8 diameters exactly. I am satisfied that the columns were, at most, not higher than this. A reason for the abnormally stout proportion is furnished by the great burden these pillars bore.

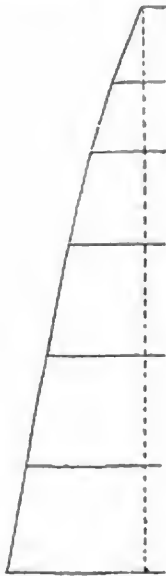


Fig. 49.—Diagram of Entasis of Column: 24 horizontal to 1 vertical.

We have seen that Wood remarked that the columns of Ephesus diminished rapidly towards the top. Mr Penrose, in his discussion of the columns of Priene, says, "The principal amount of curvature is found towards the top of the shaft, whereas in the Attic examples it occurs near the base (at the Parthenon it is below) or the middle. If an hyperbola were chosen to represent the

curvature its vertex would be above the capital." On plotting the dimensions of the memorandum to an exaggerated scale

(24 to 1), I find that the Mausoleum shaft followed the same rule, the lower half was very straight, but not upright, the upper part curves swiftly so that the vertex would be 10 or 12 feet above the capital. (Fig. 49.)

It has long been discussed whether the sculptured frieze belonged to the order, and Furtwängler and others have applied it to the podium. Following the analogy of Priene and Ephesus, I have shown that there could have been no frieze

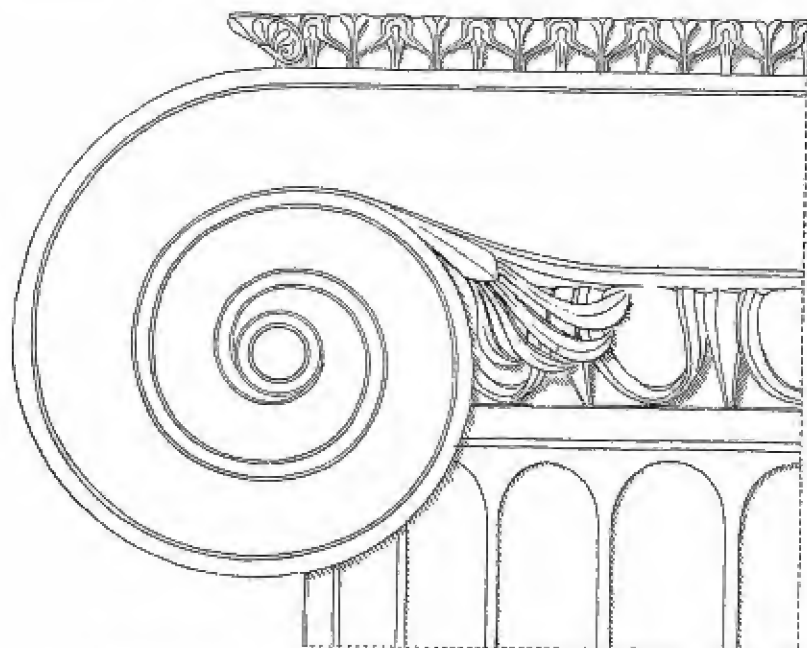


Fig. 50.—Capital reduced from Royal College of Art Survey.

of the order. This is proved so far as the Mausoleum is concerned by the way in which the cross beams are notched down for the full depth into the epistyle. If there had been a frieze the cross beams of course would have rested on the epistyle. Combining our entablature of architrave, egg and tongue course, dentil course, egg and tongue course, corona and cymatium we get a depth of 5, 11. Now at Priene the depth of entablature was three-fifths of a columniation, the arrangement proposed for

the Mausoleum gives the same. At Priene the intercolumniation was a little more open in proportion and much greater in absolute span, so that the advantage of strength is with our entablature.

At the Museum there appear to be fragments of all these parts of the entablature. The dentils are blocks 10 by 7 inches

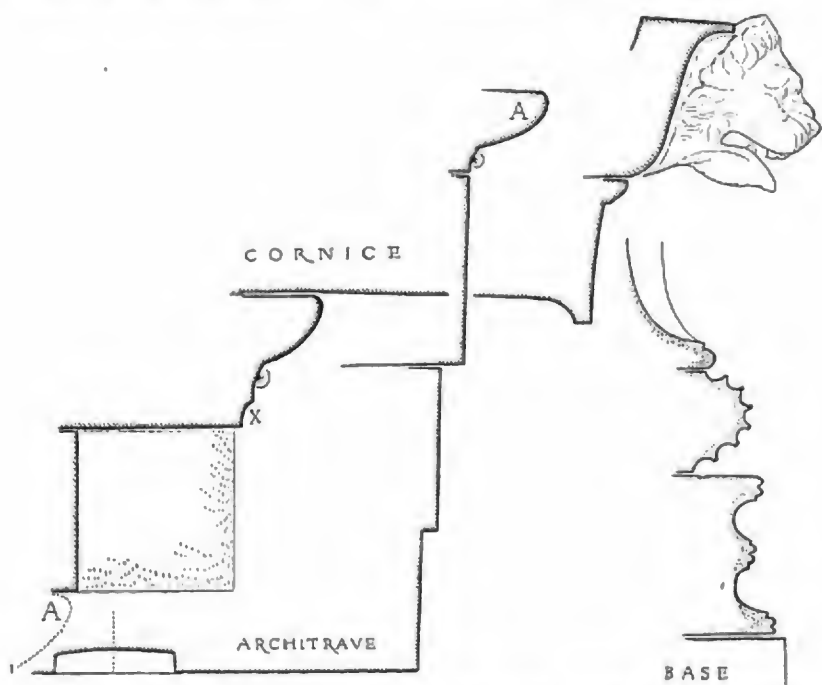


Fig. 51.—Restored entablature reduced from Royal College of Art Survey. Faces of Architrave and Cornice are not vertical. X is doubtful.

and 5 inches apart. Following Ephesus and Priene I have put an egg and tongue moulding and a cavetto beneath the corona, and this takes the place of the shallow bed mould of the Museum restoration for which there is no evidence, I believe. (See Fig. 51.) In the Museum restoration the projection which has been given to the cornice is much more than in Pullan's plates, the front of the corona being 1,9 in advance of the bed mould below. (Fig. 52.) The under side of the marble was finely dressed to



this distance, "where there is a slight rise as if for a bed." As this gives a projection much greater than in other examples, I would suggest that it should be pushed back 4 inches or so, the dressing having been so wide in order to relieve the bed mould from the weight, and this, I see, is how Pullan has shown it. On the top of the gutter "a line is marked" 1, 10 back from its nosing. Newton says that this line marked the commencement of the pyramid. In the Museum Catalogue it is called a "weather line" which is supposed to indicate the position of the lowest step of

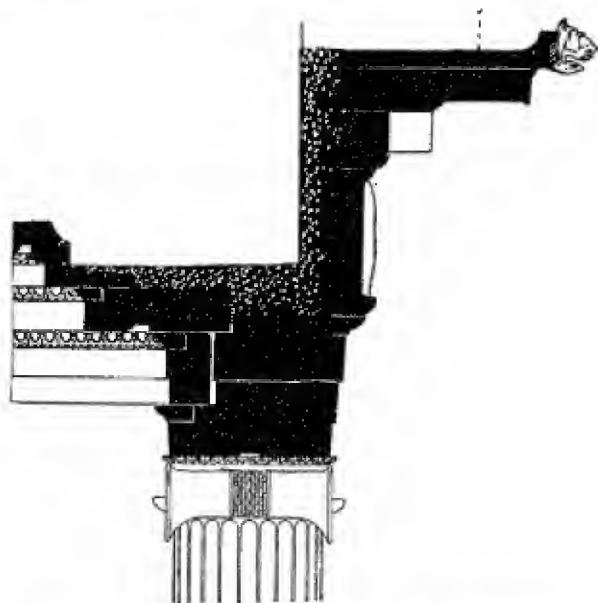


Fig. 52.—Museum Restoration of the Entablature.

the pyramid." This entirely impossible arrangement would give no back to the gutter. It brings the weight of the pyramid not only on to a 4-inch gutter stone, but about 3, 0 in front of the architrave, resting on the thin corona of the cornice. There are several yards of the gutter set up in the Museum. (Fig. 53.) It is divided into stones 42 inches long, with a lion's head spout in the centre of each. As before mentioned, remnants of two angles exist; both show that the palmette carving came up to the mitre, and one gives just enough evidence to show that the first head was

about half a stone back from the angle. The law of the distribution of the heads was to have as much carving between them, bending around the corner, as there was on the straight. The proportion of the cornice as above corrected was such as to throw the second lion's head about 6 inches behind the centre of the angle column as seen in elevation. We may find here some check on the dimensions already obtained, because the distance between the lion's heads should, on one side at least, be a multiple of 3, 6. Now as eight bays of the short side at  $9, 9\frac{1}{4}$ , equals 78, 4, and deducting 12 inches for the eccentricity of the



Fig. 53.—Detail of Carved Gutter.

heads nearest over the centres of the columns, we get a total of 77, 4, which is 4 inches more than 22 times 3, 6. On the other front we get 97,  $8\frac{1}{2}$ , which is  $3\frac{1}{2}$  inches less than 28 times 3, 6. That is 3, 6 was the best possible mean for the dimensions of the two fronts. In other words the gutter stones would have averaged about  $\frac{1}{8}$  inch more, and  $\frac{1}{8}$  inch less than 3, 6 on the two fronts.

Fig. 54 is an enlarged detail of the base. Fig. 57 is part of an inscription, which is probably of the sixteenth century, cut into the shield borne by one of the figures of the frieze.\*

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\* See Newton's article in "The Classical Museum."

There appear to be several fragments of the Mausoleum built into the walls of the Turkish fortress of Budrum. I cannot find that they have ever been described.

Some interesting observations on the peristyle by Mr Marshall were published in the *Builders' Journal*, August 1899. He pointed out that the top bed of the angle capital was countersunk, and that half the top of another capital was similar, while another has no sinking, and suggested that corresponding seatings must have been left on the architrave blocks, which thus at the angles set into the caps and resisted displacement. He also gives a good sketch of the ceiling over the peristyle.

It is probable that the columns all leaned inwards, at least one in the hundred following the inclination of the cella wall.

### SCULPTURE AND COLOUR.

The principal sculptures could not have been in pediments, as has been shown, yet Dr Six is probably right in grouping them after the model of the Sidon Sarcophagus. The description calls for an equal distribution on all four sides. Adler's disposition of groups against the basement seems to best suit the evidence.

The great chariot group which stood on the summit is particularly noble; it might be nominated for a place amongst the most "universal" pieces of sculpture in the world, for that master of mediævalism, Viollet le Duc, has rightly picked out the figure of Mausolus as having a character comparable with the best mediæval sculptures. I only know one other figure which has the same "feeling," the slender draped girl's figure from Priene, which I should like to think of as by the same artist, Pythios. It might have come from Rheims

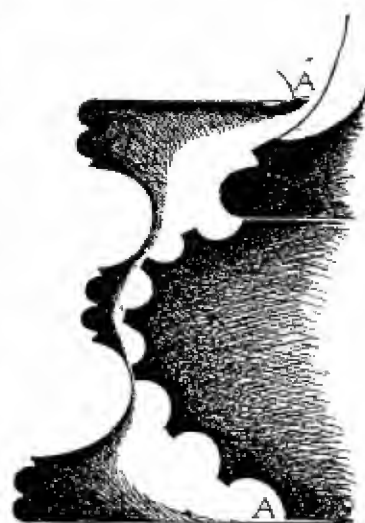


Fig. 54.—Enlarged Details of Bases.

or Chartres. The lions are comparatively poor; from the position in which they were found it seems likely that they occupied a high situation. Lions appear as guardians of the tomb at Cnidus, Xanthus, Miletus,\* on the Lycian tomb in the British Museum, and the Sidon Sarcophagus at Constantinople, and many other places.

From the fact that they all turn their heads at right angles, alternately to the right and left, it is certain, I think, that they presented a side view, and could not have been set end-on as by Adler. If they were above the cornice they may have formed

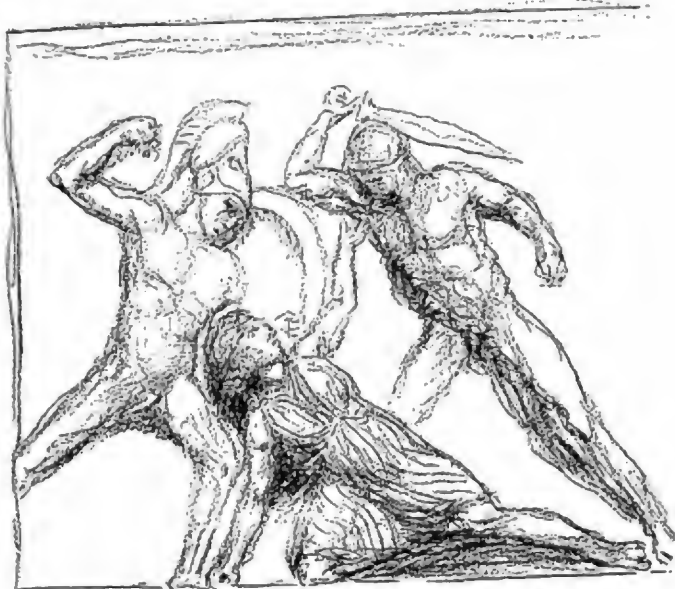


Fig. 55.—Sketch of part of Frieze, restored.

a procession approaching the centre of the front along both sides.

The frieze is an extraordinarily delicate work. It most probably surrounded the basement at no great height, like a similar frieze on the Nereid monument. It was decorated with many additions of bronze, doubtless gilt, and with colour. Newton says that "the bridles of the horses, as in the frieze

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\* See Rayet and Thomas.

of the Parthenon, were of metal"; but there was much more. For example, I find by examining the positions of many drilled holes that the warrior on slab 1007 had a bronze crest in his helmet; an Amazon on slab 1006 carried a sword strongly pinned to her hand; another, mounted on horseback, held a bronze bridle; another, in 1013, thrust a spear into a man's side; another, in 1015, grasped a shaft of bronze, which was inserted into an axe-head which formed part of the marble relief; on 1016 was an Amazon riding spear in hand. The figures are all in most violent action falling into a series of

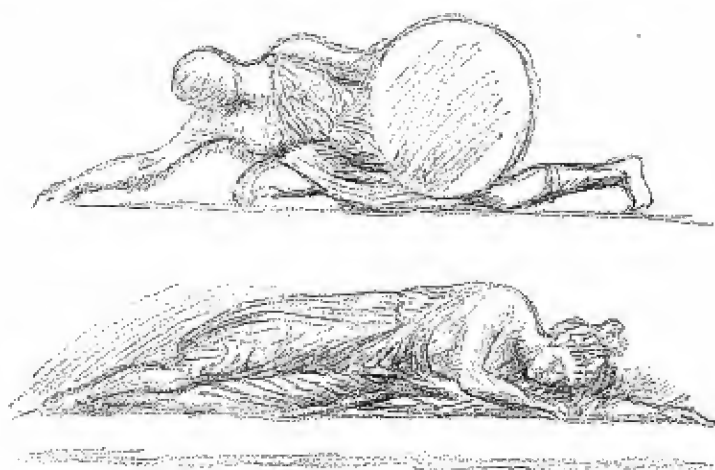


Fig. 56.—Sketches of two wounded Amazons.

diagonal lines, but the composition in its continuity and easy variety is very wonderful, and the execution is most masterly. The tense and slender figures have "the accent of bronze." It is an extraordinary *chef-d'œuvre*, but it does not satisfy like the Parthenon frieze. One or two of the fallen Amazons are charming in design and feeling. (Figs. 55, 56.)

"The whole frieze was coloured, the ground of the relief was ultramarine, the flesh a dun red, and the drapery and armour were picked out with colours." The ground of the chariot frieze was likewise blue, and the plain moulding below had a painted

leaf moulding, traces of which may still be seen in one place. A note on the memorandum in the Museum shows that the small square panels also had blue backgrounds. Indeed, this treatment of relief was customary. The principal sculptures and the lions also showed vestiges of colour. Newton reported that on its discovery the colossal seated figure plainly showed two colours. All the carved architectural members were painted. The colours were ultramarine and vermillion, "or pigments equal to them in intensity." Newton says that "the system adopted seems to have been to tone down the whole of the marble with a coat of varnish and wax, to paint all grounds of sculpture and ornament blue, and to pick out the mouldings with red." A lacunar margin-stone was found with bright blue upon it. This was doubtless in the recessed channel of it. At Priene, where exactly the same system of architectural coloration was followed, the recess on the soffit of the main architrave was blue, and the leaf moulding around it was picked out in red. The capital there had a red ground to its egg-and-tongue, and blue to the leaf moulding of the abacus.

The eyes of the volutes were doubtless gilt. In the account for building the Erechtheum gold leaf for gilding the eyes of

ITOFLE

Fig. 57.—Part of an Inscription on one of the Shields.

the columns is mentioned. Newton must be right, I think, in speaking of the ground of wax. The most perfect ancient painted work I have ever seen, the so-called Sarcophagus of Alexander, is brightly coloured, yet the whole is harmonised and softened into waxy texture and hues. "The Greeks," says Choisy, "did not conceive of form without the association of colour. At all epochs colour was present, and even the statues were painted."

#### CONSTRUCTION AND THE ARCHITECT.

The type of construction of which the Mausoleum is an example is remarkable from the way in which the marble is handled. As usual in Greek works it is put together without mortar, the joints being *polished* so as to sit very close. An abundance of bronze cramps was used to link stone to stone.

In the columns were fine bronze dowels, some of which are preserved at the Museum. The steps of the Pyramid have a raised fillet along the back and at the two ends. The latter, with those on the adjoining stones, make rolls which throw the water away from the actual joints. These fillets fit into cavities cut in the next course above. The scheme is derived from tiling, and I think it probable that the exposed joints were covered by a marble *A* piece. The entablature is, as we should think, carelessly constructed, being broken up into many pieces, and with fragile ornamental members inserted in rebates (Fig. 53). These points, and the use of mitre joints for the lacunar margins and carved mouldings, make one think of a sort of "marble joinery" rather than masonry. The workers must have been skilful in an extreme degree, and the whole outlook is very advanced and even doubtful. Adler suggests that the insertion of the delicate mouldings in rebated ledges was done with the object of hastening the works. The same custom is followed at Priene; and another reason, I think, is, that these parts are wrought in a much finer quality of marble.

The architrave is wrought in two beds, one 1, 6 deep with two facias, and the upper 1 foot deep with one. The heading joints of both come together over the columns, and at the back cavities are formed to receive the ends of the cross beams. The facias of the architrave are not in vertical planes, but incline outwards at the top. (Fig. 51.)

Pythios, the sculptor of the noble chariot group, may only have been a younger associate of Satyrus, with whom he is mentioned at the Mausoleum, as he was architect of the Priene temple, which was probably begun about 345 and was not completed until about 334.\* He belongs to a class of sculptor architects who shaped the course of Greek architecture. Pheidias, who himself was general master of works for Pericles, was followed by Kallimachos, Scopas, Polyclitos the younger, and Pythios. The rôles of sculptor and architect seem to have been interchangeable as in the Middle Ages; the Greek sculptor was a "stone-cutter." After seeing the chariot group we can under-

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\* Vitruvius gives the name in more than one form, but see Rayet and Thomas.

stand Vitruvius when he says : " Those who are initiated in different branches of knowledge have facility in acquiring all, from their connection with each other. On this account Pythios, one of the ancients, architect of the noble Temple of Minerva in Priene, says in his Commentaries that an architect should have that perfect knowledge of each art and science, which is not even acquired by the professors of any one in particular." A large claim, but I am at least convinced that in all great times architects have been stone-cutters.



GREEK BUILDINGS  
REPRESENTED BY FRAGMENTS  
IN THE BRITISH MUSEUM  
BY W. R. LETHABY

III.

THE PARTHENON AND ITS  
SCULPTURES

LONDON

B. T. BATSFORD, 94 HIGH HOLBORN

1908



## NOTE.

As this is the Third of the Series of Monographs on GREEK BUILDINGS, the pagination is continued from the second, for convenience of reference when the complete Series is bound.



### III. THE PARTHENON AND ITS SCULPTURES.

*"It was observed of Phidias, that as a statuary he excelled more in forming gods than men; a short encomium containing the substance of a panegyric."*—CHANDLER.

#### DATE, PLAN, AND CONSTRUCTION.

THE Parthenon, until comparatively modern days, seems to have existed as an almost perfect monument. In 1632 it was described as a temple "entire, and little injured by time."\*

Randolph, an English writer, about 1675, speaks of it as entire and one of the most glorious buildings in Europe, being of white marble. "The body is 168 feet long by 71 wide; its total length is 230 feet, and it has 17 pillars on the sides, by 8 at the ends, each 19½ feet round about. It is very dark, having only some lights at the east." About this same time valuable drawings of the sculptures were made for Nointel, a French ambassador. From the date of these records the destruction has been continuous, until at the beginning of the last century the temple was but a shattered wreck. (Figs. 58, 59.) It was begun in 447 B.C., and was practically completed ten years later. In 438 the great interior ivory and gold statue of Athena was consecrated. Some fragments of building inscriptions, discovered in 1888, show that in 434-3, "the fourteenth year," the works were still in progress, but it is thought that these would only be details of completion, such as channelling the columns, painting, waxing,

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\* Courmenin. Tavernier speaks of columns of porphyry and black marble: he must refer to the interior of the church.

and polishing. In 437 Phidias, banished from Athens, probably began his great Zeus of Olympia.\*

The size of the Parthenon, measured at the top step, was 101.4 by 228.3. Good plans, according to recent opinion, have been published by Penrose, Dörpfeld, L. Magne, and Middleton. (Fig. 60.) The superstructure rests on a colossal foundation; as it was built in part over the sloping sides of the Acropolis rock, its southern foundation is built up from a depth of about 50 feet. There are continuous walls under the internal columns, and underneath the floor solid courses of masonry are extended over the whole area many feet in depth. The foundations in part belong to an older temple. The inner rows of six columns at the two ends of the temple stand above the level of the

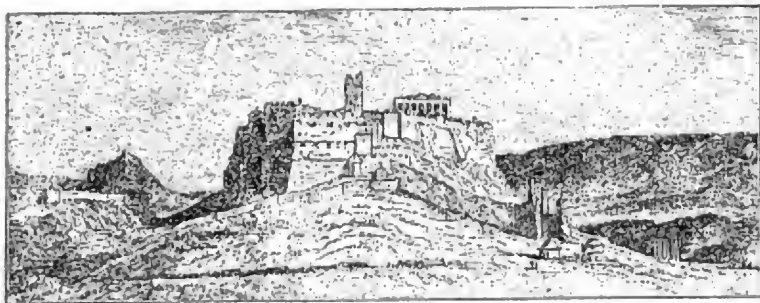


Fig. 58.—The Acropolis a century ago.

peristyle on two steps, and are less in scale than the outer ones. (Figs. 60, 62.) The positions of the columns which divided up the chief cella are clearly marked in some places upon the pavement. They had a diameter of about 3 feet 7 inches, and from the size it is obvious that there must have been two stages, as at Olympia and other places. Penrose speaks of pieces of the upper architrave found on the site. A portion of one of the eastern responds of the internal colonnade still remains by the entrance door. At the other end the colonnade returned behind the great statue. In the smaller cella, or opisthodomos, were four columns which divided the ceiling into nine equal

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\* Lechat.

compartments, the size of which was not too great for them to be roofed with stone, and as this was a treasury it is probable that it was so covered. Traces in the walls showed that the beams of this part were 3 feet wide, and this is evidence for their having been of marble.\*

Some writers have supposed that the columns in the opisthodomos would have been Ionic, but the stone squares on which they rested are of the same size as those of the inner external order, and Penrose is probably right in showing columns of the same diameter also.

After long dispute it is now generally agreed that the great cella was lighted only through the open door-way, although an



Fig. 59.—The Parthenon in its present shape.

elaborate French restoration, only just published, follows the hypæthral heresy and allows the ivory statue to stand in the open air. As long ago as Chandler the view to which Dörpfeld has returned was expressed, and Wilkins in his "Pro-lusiones," writes: "Where is the authority for assuming the Parthenon to have been hypæthral? No such authority exists, and the speculations of Stuart originated in error. . . . No provision was made, or contemplated, for the admission of light otherwise than by the doorway and by artificial light."

The construction of the marble work is not only of mar-

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\* Penrose, p. 14, Plate V.

vellous accuracy but methods of workmanship were developed in marble building suitable only to this fine material. For instance, mitre-joints are used for the moulded members of the beams of the peristyle, and the pediment is cased with slab-work which is in ten large pieces. The architrave is made up of three pieces side by side, as we sometimes use timbers. The frieze above consists of a facing and backing only, allowing a free space in the middle almost big enough for a passage. The slabs of the pediment were hollowed away at the back and the lacunar stones were pared away on the top so as to lighten them as much as possible—a method which was carried further

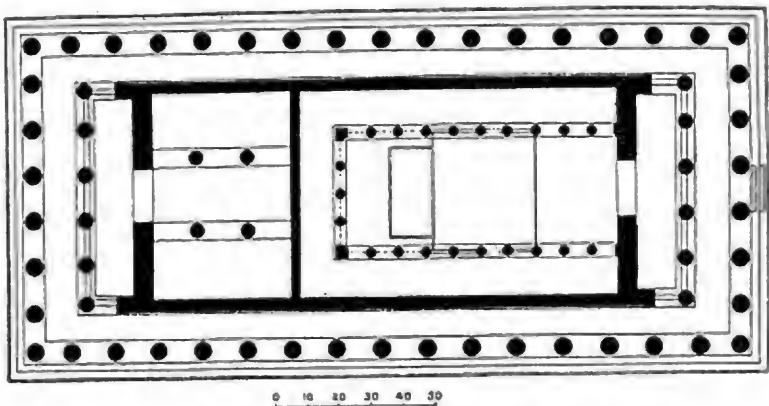



Fig. 60.—Ground Plan : from Dörpfeld.

at Bassæ, where some of the marble beams were channelled out in the middle and became of this shape . (Fig. 63.) Iron dowels and H-cramps were used plentifully in attaching stone to stone, and strong iron bars, or cantilevers, from 6 to 10 inches wide, and about 4 feet long, were placed above the end cornices apparently to relieve the weight of the greater figures. These were only set a little way into the masonry of the pediment, but as the tympanum face was considerably behind that of the architrave the relief to the overhanging cornice must have been sufficient if this was indeed the purpose of the bars. The pediment slabs were attached to the backing by curiously modern-looking holdfasts. (Fig. 64.)



"The joints of the marble fit so closely that it is frequently difficult to perceive them, and it is almost impossible to imagine a finer line than they show. This can hardly have been produced by other means than that of the stones having been rubbed upon one another." Penrose goes on to say, following an observation of Stuart's, that some of the stones had grown together: "May not the attraction of cohesion taking place between the two surfaces in almost absolute contact be sufficient to account for it?"

"Difficulty occurs in explaining how the vertical joints of the architrave could be brought to such exquisite fineness. Some light has been thrown on this question by an inscription reciting the method to be used for building a temple at Lebadea — vermillion and olive oil were to be applied in some unexplained manner, and a stone *canon*, or rule, was to be used."\* Choisy, commenting on this passage, observes that the method in question must have been that called by French masons "*dressage au rouge*," where the red powder, having been applied to a true plane, the newly wrought stone is brought in contact with it until it takes up the red equally all over, thus proving that it also has been brought to a plane. An inscription regarding the works at the Erechtheum† also mentions polishing a *canon*. Doubtless a true vertical was also set up by the side of the plane table so that perfect right angles could be obtained.

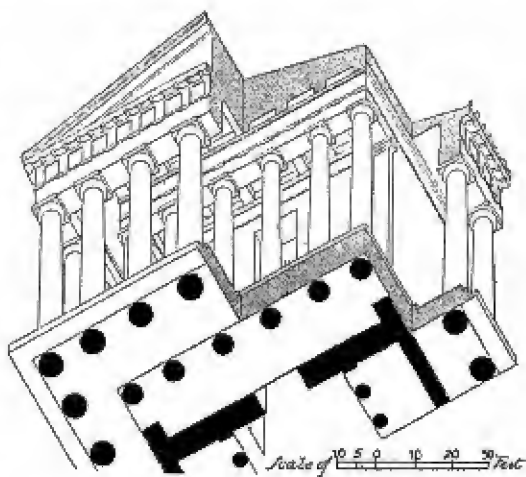


Fig. 60A.—Diagram of Portico: after Choisy.

\* Penrose.

† Penrose, pp. 25 and 124.

According to Penrose the capitals were turned in a lathe, and they are so true that it is clear that they were finished by rotary

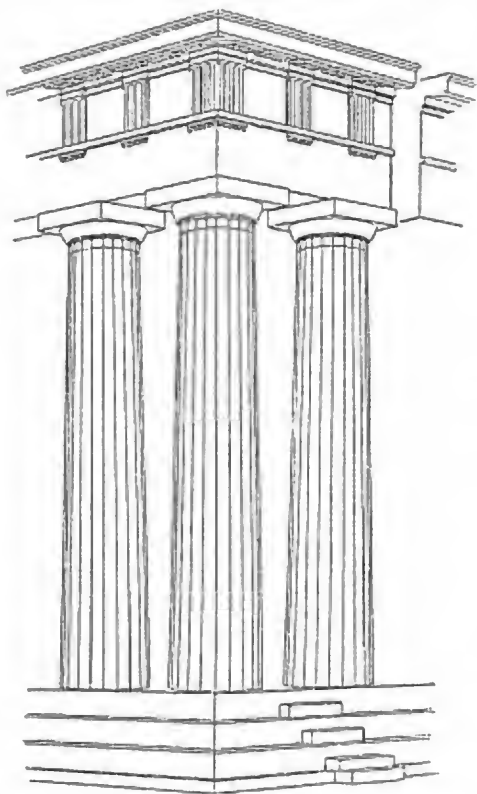


Fig. 61.—Diagram of the Angle: Pediment omitted; Small steps only suggest the height of stylobate.

action, but as there is no sufficient means in the top bed whereby such immense blocks could be attached to a lathe, it seems to me much more probable that they were finished by some revolving trammel.

Penrose thought that the drums of the columns were ground together by rotating on their central pins which were of wood. Magne says this idea is ruled out by the fact that in consequence of the inclination of the columns the horizontal beds are not surfaces of revolution. I cannot see that this remark is justified: if a point in the circumference was finally brought back to its

proper position the fact that the axis of a drum would lie in different directions as it revolved would be immaterial.\*

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\* Penrose distinctly says moved "through a small arc." However, wood dowels and even wood cramps were not uncommon, and altogether I consider it most likely that the 2-inch wood pins in 4-inch square blocks of the Parthenon were simply dowels. It seems to have been usual to put even bronze dowels into "boxes," some of which were square.

The lowest course of the cella wall was, following the general tradition, built of great blocks.

The mouldings are few and simple although of slight and

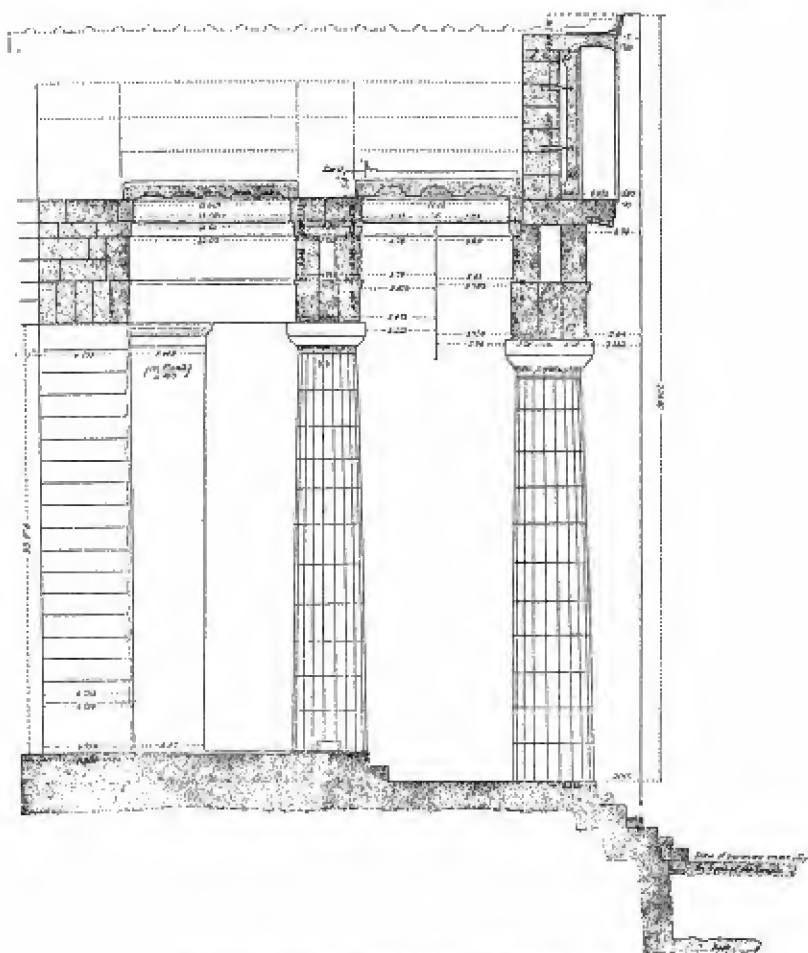


Fig. 62.—Section of Portico : from Penrose.

subtle curvature. The only carvings other than the sculpture were simple egg and tongue, and bead and reel mouldings at the antæ ; the latter is repeated above the metopes. (Fig. 65.)

In the roofing there are several curious adjustments. The

lowest course from which the marble tiling starts has its upper surface slanting in the same plane, the lower surface being level-bedded on the cornice beneath. On the upper slanting face are worked stops for the cover-pieces of the tiling, keeping them from slipping. Along its edge antifixæ are attached, one over each metope and triglyph. The marble tiles space up three to every two antifixæ, which are thus purely "ornamental." The tiles against the edge of the gables curve upwards forming a cymatium to the pediment. At the bottom of the gable the cymatium returns a little way on the flanks, forming blocks from which project fine lions' heads, like spouts, but these also are ornamental. (Fig. 66.) At the bottom of the row of marble tiles which turns up to form the cymatium is affixed on the slant a stone which for about 8 feet up the roof rises flush with the top of the cymatium, and on it, towards the bottom, is worked a



Fig. 63.—Lacunaria.

level seating for the base of an acroterion. This stone is partly caught at the bottom by the block on which is carved the lion's head. All this is best understood from Penrose's minute

analysis, but I give a plan from the Stuart papers at the British Museum. (See Fig. 67; A, B, C, D, is the slab bedded on the tiles.)

#### REFINEMENTS AND IRREGULARITIES.

The lines and planes of the Parthenon are adjusted and modified in many ways from what we are apt to think should be the normal procedure in building. The stylobate on which the columns rest rises in a curve about four inches at the centre of the flanks while at the fronts it rises about three inches. The architrave follows a similar curve. All the columns have a delicate entasis, that is, in diminishing from the base to the capital they follow a curved profile instead of a straight one. The outer columns of the peristyle lean inwards about three inches, being an angle of about 1 in 50. "Vertical" parts of the entablature lean still more; the abaci of the capitals and the faces of the cornice, and other small parts, incline outwards. Perpendicular faces are the exception and not the rule. The

"vertical" axes of the capitals are not in the same line as those of the shafts, they are said to lean forward in a contrary direction.\*

The angle columns are larger than the rest, and the inter-columniations next to the angle are considerably less than the others. The inner external order of columns is of more slender proportions than the outer order.



Fig. 64.—Iron Cramps.

All these adjustments are, we may suppose, entirely intentional, but, notwithstanding the exquisite precision of the work-

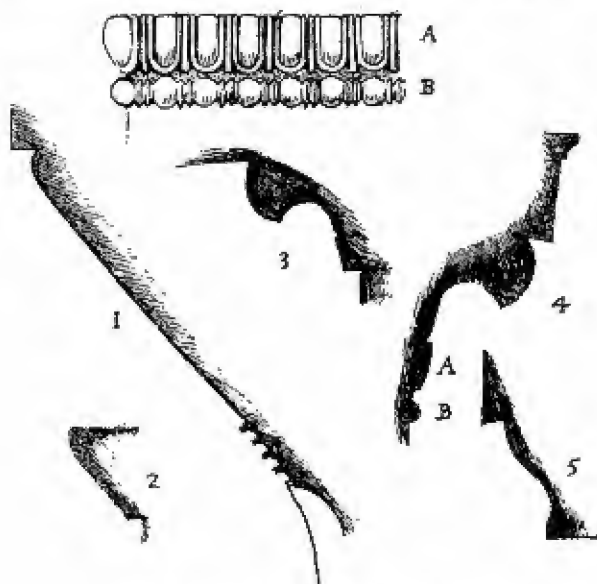


Fig. 65.—Profiles of Mouldings.

manship, there are many other irregularities which appear to be accidental or made necessary by circumstances. The columnia-

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\* A level seating is worked on the stylobate for each column to stand on. The beds of the several drums are level except the top ones, which are worked to the general curve the architrave is to follow, the capitals being of equal depth.

tions along the flanks vary among themselves, following no apparent law; the probable reason being that their exact dimensions were taken from the stones intended for the epistyle, which were quarried of slightly varied lengths. The metopes of the fronts vary by two or three inches. At one of the angles the architrave projects more than four inches further on the abacus on one side than the other. The abaci of the columns are largest at the east, and smaller at the south and west. At the north and south they diminish from east to west, but not regularly. To whatever motive, says Penrose, we may attribute these irregularities, we learn that the Greek architects "did depart



Fig. 66.—Lions' Heads : They are turned a little towards the Angles of the Building.

somewhat from that strict regularity of proportion of which abundant examples may be found in the plan and elevation of the temple." The idea of proportion here referred to was that of making adjacent parts bear some simple ratio to each other; thus, for example, the sides of the rectangle formed by the upper step of the stylobate were exactly as 9 to 4, and the heights and diameters of the columns, the widths of the abaci, and other parts, seem to have been designed so as to have dimensional relations each with the other.

In regard to the adjustments by inclination and curvature first spoken of, it has been usual to consider them as being intended to correct certain optical defects which it is supposed

the truly horizontal and vertical lines would have presented to the eye, and that by these adjustments they were made to *appear* perfectly level and perpendicular. This is too much of a "front elevation" idea, for from other points of view the curvature of the stylobate is perfectly visible. The real reason would seem rather to be a desire to sweeten the transitions, and to

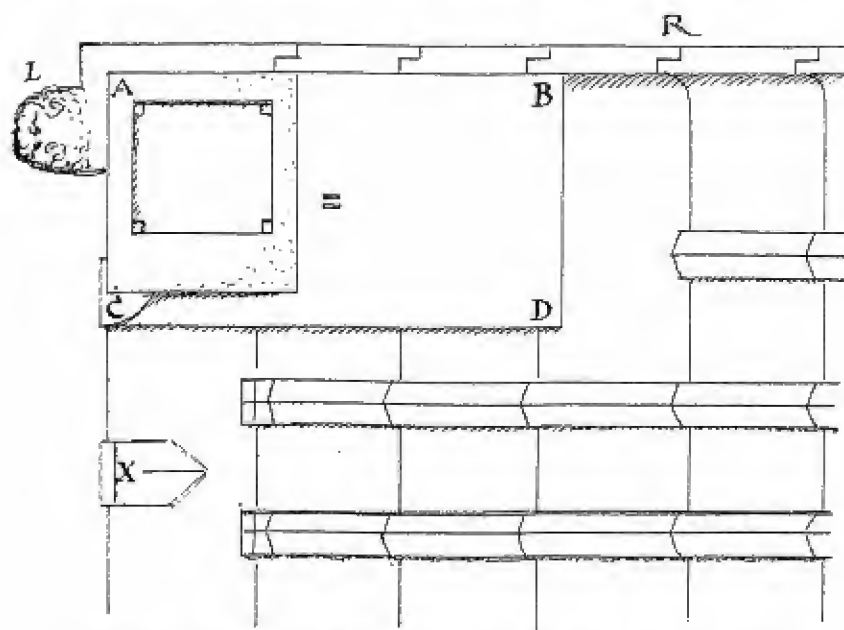


Fig. 67.—Plan of Angle of Roof: A, B, C, D, Stone fixed on Tiles ;  
L, Lion's Head ; X, Antefix ; R, Cymatium of Pediment.

create a unity out of the many similar parts. Also, as Penrose has seen, delicate effects of light and shade must have resulted from slight changes in the direction of the surfaces.

#### ARCHITECTS.

The rebuilding of the Parthenon was only part of Pericles' great scheme for the architectural adornment of the Acropolis after the close of the Persian wars in 449 B.C. The Nike temple by the Propylæa may have been the first actually begun. An

inscription has recently been found whereon is ordered the construction of a temple, a gateway, and an altar of marble, according to the direction of Callicrates the architect; and a guard-house was also ordered to be built about 447 on the Acro-

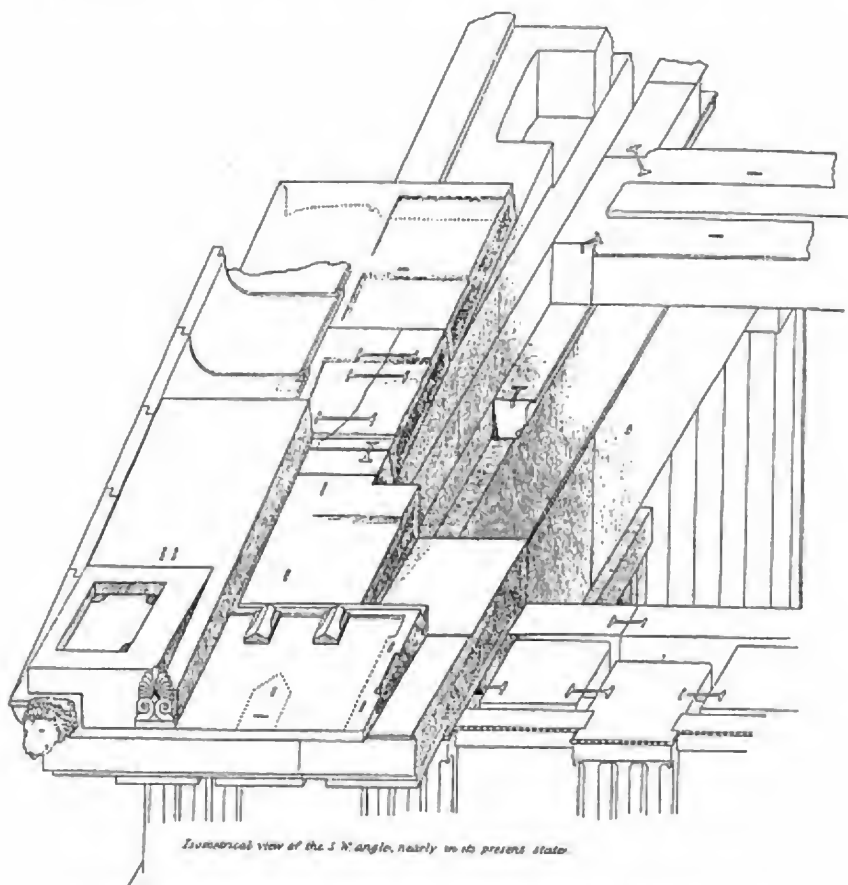


Fig. 68.—Perspective View of the Angle of Roof: from Penrose.

polis by the same architect. As early as 460 we hear of this same Callicrates in connection with the building of the Long Walls at Athens. Now the Parthenon was begun in 447, and we are told that the architects were Callicrates and Ictinus, working under the



supreme direction of Phidias. We hear of Ictinus again as having, according to Pausanias, built the temple of Apollo at Bassæ, and the Great Hall at Eleusis. The work at Bassæ seems considerably later than the Parthenon, and it seems open to question whether we may not suppose that Callicrates was the first master at the Parthenon, and Ictinus a younger man. Plutarch, who is the best authority, says: "Phidias was appointed by Pericles the superintendent of all public edifices, although there were other eminent architects and excellent workmen amongst the Athenians.\* The Parthenon, which had been 100 feet long, was rebuilt by Callicrates and Ictinus. The Long Wall was also built by Callicrates. The golden statue of the goddess was the work of Phidias. Through the friendship of Pericles he had the direction of everything, and all the artists received his orders." "Works of great magnitude and inimitable perfection were raised, while every architect was striving to surpass the magnificence of the design by the beauty of the execution. But the most wonderful circumstance was the speed with which they were completed, for edifices which might seem to have required the labour of generations were finished during the administration of one man. While it is generally true that time expended in labour is paid for by the duration of the work, yet the structures of Pericles built in so short a time were yet built for ages. Each, as soon as it was finished, had the venerable air of antiquity, so now that they are old they have the freshness of a modern building, as if they were animated by the spirit of eternal youth."

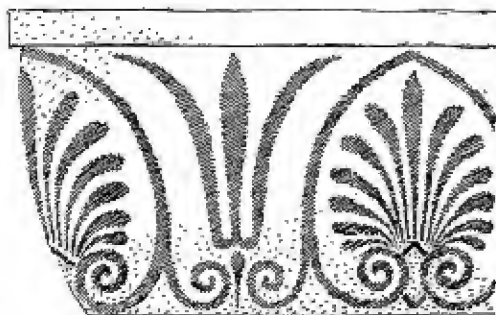


Fig. 69.—Painting on Cymatium :  
after Vulliamy.

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\* This seems to mean to the office of city architect. Ictinus may have swallowed up the fame of Callicrates as he wrote a book on the Parthenon.

The work was carried on amidst considerable political obstruction, and Plutarch has quite an interesting essay on the political economy of art in the city, which he gives us to understand expresses the opinions of Pericles. That which was the delight of the Athenians and the wonder of strangers, he says, was the magnificence of the temples and public edifices. The opposition, asserting that Pericles wasted the public treasure, urged that it must be considered an act of tyranny when the money which had been contributed toward the war was lavished on adorning Athens with temples that cost 1,000 talents.

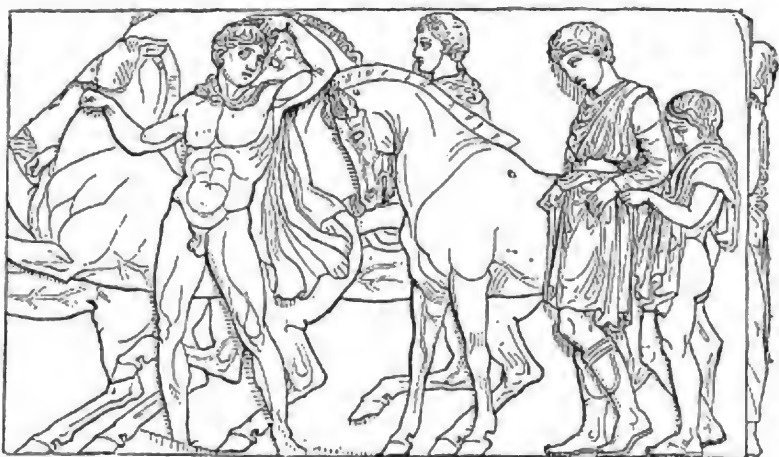


Fig. 70.—Frieze : Angle Group, getting ready.

Pericles answered that superfluous wealth was best expended on works which would be eternal monuments of its glory, and which during their execution would diffuse wealth—for all kinds of labour and materials being required, every art would be exercised and every hand employed, so that almost the whole city would gain while it was being adorned. Even the mechanics and common people would have their share of public money, while they would not be supported in idleness; for the different materials such as stone, bronze, ivory, gold, ebony, and cypress, furnished employment to carpenters, masons, metal-workers, and others, and their transport employed sailors, carriers, paviors,

and the like. Thus by the exercise of their different trades was plenty diffused amongst persons of every condition.

The Propylæa, whose architect was Mnesicles, was begun directly after the practical completion of the Parthenon, about 437, and was probably completed about 432 together with the temple of Nike.

The Erechtheum was begun about 421, and was still in progress in 408, when an inquiry was held in regard to the works necessary for its completion. The results of the inquiry are recorded on an inscription in the British Museum. These



Fig. 71.—Frieze : Horsemen.

building accounts show that there was a commission appointed for carrying on the works, and that an architect Philocles was, in 408, a member of it. In the erection of public buildings in Greece it was usual to have such a board to supervise the progress and arrange contracts. That there was a board of this kind for the works at the Parthenon appears likely from a fragment of papyrus at Strassburg.\* It seems very much like the mediæval custom as to building.

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\* Murray's "Parthenon," p. 8.

## COLOUR AND BRONZE.

The structure and the sculptures were decorated by painting and by many accessories of bronze, which were doubtless gilt. One of the fullest accounts of the painting is given by Penrose, although his harsh colour prints must not be held to represent the original hues. Like Hittorff and others, he thought that the whole surface of the marble had first been given a general tint to reduce its high, hard lights, to an ivory tone. Probably this priming was of wax—"patinage à la cire" (Lechat). This treatment was found to have been used already when the



Fig. 72.—Frieze : Waiting Magistrates.

archaic statues discovered some twenty years ago on the Acropolis were wrought.

Some of the smaller architectural members, and the backgrounds of the sculptures, were painted in plain, bright colours. The triglyphs and the mutules above them were coloured blue, the spaces between the latter were red, the guttæ (according to L. Magne) were also red. The field of the pediment was probably blue or red. At Ægina it was blue. The bands above and beneath the triglyphs had fret patterns; the guttæ band beneath each triglyph has a small palmette pattern. The cymatium had a larger palmette pattern. (Fig. 69.) In the squares at the angles of the cornice, between neighbouring mutules, were compositions like the ornaments used by vase painters, one of which

is carefully drawn in Laborde's fine book. All the mouldings, both outside and within the peristyle, had painted patterns, with the exception of the large swelling mouldings of the capitals, on which no trace has been found. I should think it likely that the succession of small fillets and hollows beneath the capitals were coloured and gilded. Within the peristyle, the band above the frieze, the *antæ* capitals, and the coffered ceiling, were fully decorated. The blue is said to have been deep, the green was of verdigris, and the red bright. No actual gilding was found, but "there can be little doubt that the gilding is necessary to complete the harmony of the colouring" (Penrose). Two or three fragments in the Museum still

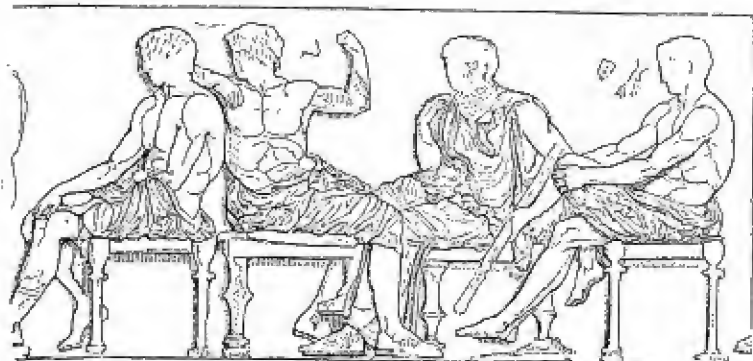


Fig. 73.—Frieze: Hermes, Dionysos, Demeter, and Ares.

bear traces of the painted pattern-work; one length of the band above the frieze shows the double fret, and a similar band from the Propylæa is decorated with Lesbian leaves. Many writers remark that the outlines of the patterns were first traced with a sharp tool. The colouring at the Parthenon followed an almost fixed tradition. At the Theseum, for instance, Sauer found that the triglyphs and mutules were blue, the drops and other small surfaces red, the background of metopes red, and of the frieze blue, while all the mouldings were patterned. "No doubt all the Greek temples were ornamented. The temples of Ægina and of Apollo in Arcadia (Bassæ), are enriched with a profusion of painted ornaments. The statues found in the

temple of Ægina were all painted, and the attributes were of bronze and lead."\*

At Ægina the scheme of colouring was practically the same as at the Parthenon. The metopes and mutules were blue, the spaces between the latter were red, the only other colour was an "apple-green." At Rhamnus, again, the pattern on the cymatium was red, the lacunaria were blue with gilt stars, the mouldings around them had painted eggs and tongues; some green remained in places. The same blue triglyphs and mutules with red bands and spaces have been found on early fragments discovered on the Acropolis.†

The late examination of the western metopes of the



Fig. 74.—Frieze : Iris, Hera, and Zeus.

Parthenon by Mr Ebersole revealed many traces of colour, as well as of bronze bridles and swords. The upper left field of No. 14 shows some remains of red. Spots of blue were observed on the triglyphs, painted patterns were plainly visible on the corona and tænia, on the strip beneath the triglyphs were little palmettes, which still remain on No. 15.

In regard to the sculptures, almost all direct evidence is lost; but there cannot be any doubt that they were richly coloured. In "Museum Marbles," a description is quoted from M. Mellin, of the slab of the frieze, now in the Louvre. "This

\* Dodwell.

† See Theo. Weigand, "Archaic Poros Architecture," 1904.

marble, before it was cleaned, preserved traces not only of the encaustic colour (*i.e.*, the waxing), with which according to the custom the Greeks covered their sculptures, but also of the real painting of some parts. . . . The ground was blue, the hair, and some parts of the body, were gilt.\*

This agrees very closely with Dodwell's description of the frieze of the Theseum, where, he says, "the colours are still perceptible on a close inspection. The armour and accessories have been gilt, the drapery is generally green, blue, or red; which seem to have been the favourite colours of the Greeks. The open air [*i.e.*, the background] is painted blue."

Penrose thought he saw "a slight trace" of colour on one metope. Beulé says of one, that "the drapery of the woman was green, the ground being red."

Not only the reliefs, but the great sculptures were finished with colour and additions of gilt bronze. Leake says, "We found proof in many traces that the statues and reliefs, as well as the members of the architecture, were enriched with various colours, rendering them pictures as well as groups of statuary." Cockerell pointed out the remains of a coating on parts of the "Ilissus," and Murray says, "It appears that originally the sculptures had been covered with a thin wash or size of lime."

He referred to the remains of bright colour on the pediment sculptures of Olympia, and concluded that there was no doubt that the Parthenon groups had been similarly decorated. The Laborde head in Paris, which is accepted as having come from the Parthenon, still shows traces of red in the hair, as do many other antique heads. The thought of coloured statuary is apt



Fig. 75.—Frieze:  
Athena and Hephaistos.

\* Cockerell, in the *Ægina* volume, says gold is observed in many parts of the Parthenon. This, perhaps, should read—some traces of what might be gold.

to offend people, but I do not think the statues themselves would leave any room for doubt. The general tradition, down to the Renaissance, was to colour all sculpture; at that time, I believe, finding remains of antiques from which the colour had *disappeared*, it was thought to be "classical" to do without colour, and thus the modern incomplete sculpture arose.

Bronze was largely used in the structure. The columns of the pronaos and posticum had metal screens set between them, as traces still show. (Fig. 62.) The doors were probably of bronze, the jambs were "probably cased with bronze, fixed on wooden framing, for which a shallow rebate is provided \* in the stonework." The jambs were very slightly inclined.



Fig. 76.—Frieze : Central Panel.

The bronze accessories mentioned before were profusely used. The horses of the sculptures had bridles. Some of the figures doubtless held symbols, and probably the chariots of the west gable were of bronze. Dionysos had sandals, the goddesses had bracelets, clasps on their shoulders, and even earrings. The serpents of Athena's ægis were bronze, and along the ridge of the mane of one of Selene's horses are many holes, in which small objects must have been attached, possibly stars, or little balls to shine like sea spray.

On the epistyle were placed round shields of bronze, nearly 4 feet in diameter, one over each column on the western front,

\* Penrose. At Olympia, Pausanias says, the doors were of bronze.



and one under \* each metope on the east. On the north and south fronts there were single shields at each end.† Between the shields of the east front are traces of rows of lettering. "There are five rows, with nine holes in each," says Dodwell. The shields, it is generally said, were fixed "long after"‡ the completion of the building. Penrose says that they were fixed "at some uncertain period. They are said to have been fixed by Alexander the Great—they were attached more rudely than is likely to have been the case at the time of building." The idea of their being late may have arisen from what Pausanias says of shields having been affixed to the temple of Olympia by Mummius, the Roman conqueror of Achaia, 146 B.C. He also says, however, that there was another shield beneath the Victory on the pediment; this was probably placed there in the fifth century along with the Victory. Again, there were shields at the temple of Delphi, those on the east and north having been given by the Athenians in memory of Marathon, and those on the west and south having been given by the Ætolians in memory of their victory over the Gauls. The temple at Delphi was built in the fourth century, and the recent discoveries have shown that the shields were fixed in the metopes, which were unsculptured. We may fairly suppose that the Athenians hung up their memorial shields on their own temple before they sent them to Delphi§. As I shall show that the metopes of the west front of the Parthenon had reference to the Persian war, we may conclude that the shields there were in



Fig. 77.—Frieze: Head of Hera, restored.

\* Not exactly, they seem to have been drawn nearer together in pairs over the columns.

† Also, in some places at least, objects under the triglyphs attached with three pins, thus, . . .

‡ Leake. § "The Athenians dedicated shields at Delphi after the battle of Plataea" (Furtwängler, p. 446). An examination lately made by an American student suggests that shields were put up at four times.

memory of the Athenian victories, and that they formed part of the original bronze adornment of the temple. The architectural use of memorial shields represented in marble is found on the monument at Cnidus and other works, some of which must be earlier than the time of Alexander. Bronze shields must have been used before they were copied in this way. As there is a difference in size and distribution between the shields of the east and the west fronts, there may be a difference of age. The inscription on the east architrave is of the time of Nero.

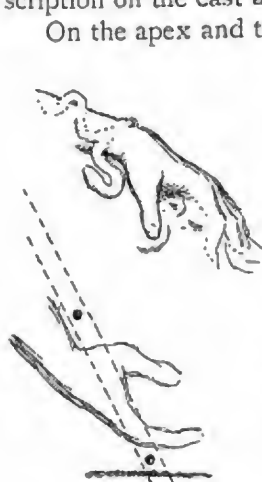


Fig. 78.  
Hands of Athena.

On the apex and two lower angles of the pediment acroteria were set, following ancient tradition much older than the Parthenon. The blocks for the pairs at the lowest angles still exist, having sunk spaces, 2.7 square on the upper surface, in which they were inserted. (Fig. 67.) As Cockerell says, "the existing remains show that very considerable ornaments were originally placed at the angles of the pediments; and it cannot be doubted that, conformably to the general practice, the apex of the temple was also similarly adorned."\*

At the lower angles of the temples of Ægina and Rhamnus (one earlier and the other later than the Parthenon) were sphynxes. At Olympia were, according to Pausanias, vessels of gilt bronze. It is said that such bowls on the pediments of the Parthenon are casually mentioned in an epigram, to which I cannot find a reference. Bohn adopted them in his restoration; Magne, without giving reasons, says that the acroteria were certainly of metal.

### SCULPTURES—THE FRIEZE.

In describing the sculptures of the Parthenon it may be best to begin with the frieze, the best known and most complete of the three great divisions—frieze, metopes, and pediments.

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\* "Museum Marbles."

All the sculptures relate to Athena and the dependence of the Athenians upon her. The east pediment represents her birth, the west her taking the city and the land under her protection. The eastern metopes show her amongst the gods battling with the powers of dark and ill, the other metopes contain the acts of the heroes done by her assistance. The pediments were stone books of Genesis and the Covenant, the metopes were chapters from the Books of Kings and Chronicles; the frieze, representing the present relation of the gods to the chosen city at the great feast of Athena, was a sort of Psalm of rejoicing.

On this band 524 feet long which surrounds and surmounts the cella walls, is sculptured a procession in honour of Athena, which progresses, in two streams, from the west front, to the middle of the east front where it is received by a group of gods assembled over the east door. On the west front is shown the preparation for the start. Both the north and the south sides have a general resemblance in the succession of groups of horsemen, chariots, and maidens, as if it were intended to represent the right and left flanks of the same advancing body, although there are considerable differences in the details. The eastern frieze falls into seven parts: 1 and 7 are the heads of the procession overlapping from both sides; 2 and 6 are groups of magistrates who wait to receive them (Fig. 72); 3 and 5 consist of dignified seated figures of larger scale, obviously the gods, waiting and looking outwards (Fig. 73); 4 is a central group quiet and detached, which appears an anti-climax to the rest of the scene, beyond or outside. (Fig. 76). It is so completely divided off from the general action by the two groups of gods who turn their backs on it, and by being isolated in a bare space such as we find nowhere else on the frieze, that it seems probable that this part was thought of as within the temple itself. There seem to be slight indications of lines dividing off this group, as if this central panel had a background of a different colour from the rest. The general balance of the whole composition, and the isolation of the central



Fig. 79.—Frieze:  
Head of Apollo.

scene, exactly above the entrance door, can be best seen on Lucas's fine model in the Gallery. The middle figure of all is that of a priestess who is approached on her right by two female attendants bearing seats. On her left a man and a boy are folding a large square of cloth which we can see is doubled over and over again. As it is difficult to think that this can represent the delivery of the new Peplos—for the procession has not yet reached the temple—it seems more likely that the action is that of folding up the old one preparatory to replacing it.\* (Fig. 76.)

The watching gods and waiting magistrates must mark the reception of the troop at the temple. On each side there are four magistrates standing nearest the centre, who are as yet



Fig. 80.—Frieze: Diagram showing mass and background.

unconscious of the approaching throng, and two who turn toward it. One of these, on the right, signals to the inner group.

The identification of the gods has been discussed for a hundred years, but is now practically fixed. The assembly consists of twelve chief personages and two minor ones (Iris and Eros), seven on each side. The first on the left is certainly Hermes, a youth nearly nude, leaning forward in eager attitude. (Fig. 73.) He is shod, and rests his characteristic hat on his knee, while a drilled hole shows that he held the caduceus, of bronze, in his hand. The last figure of this group (7) is also sure. It is Zeus enthroned and holding a sceptre in his right hand. In

\* Since writing this I see that this explanation has been suggested by Mr G. F. Hill.

conversation with him is a noble goddess (6). On her forehead there seems to be some trace of a diadem (Fig. 77). Dr Murray says it is of willow, an earlier writer says olive; and close to her elbow stands Iris (5) the messenger. This is clearly Hera.\* The third figure is a goddess, who leans forward against her raised right hand in an attitude that became typical for mourners. She has a veil falling on her shoulders exactly like a Demeter at Berlin, and held in her left hand a long torch formed of reeds bound together. This is certainly Demeter.† On either hand of her is another god. The one between her and Hermes (2) sits backward leaning listlessly against Hermes. He is the only one who sits upon a cushion and is probably Dionysos. In his raised left hand he may have held a thyrsus. On the other side, towards Hera, is Ares (4). By his foot appears the end of the shaft of his spear which would have been completed above in painting. The attitude in which he sits with his hands clasped around his knee is repeated in a well-known statue of Ares in Rome.‡ (Fig. 73.)

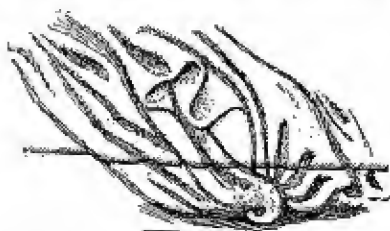


Fig. 81.—Frieze: Incised Drapery.

Passing across the central panel and coming to the corresponding group of seven gods on the right, the first pair (8 and 9) are on the same long slab as the central subject, and the Zeus and Hera of the left hand group, the slab being 14 feet 6 inches long. The first figure (8) is a slender girl who can be no other than Athena. (Fig. 75.) In her right hand she held

\* Cf. a relief of Hera and Zeus in the Mausoleum Annexe, also the pediment of the Nereid monument and a metope of Selinus (Collignon, fig. 213). "A breath of Homeric poesy animates this scene." The first and the last are very much alike.

† The attitude of mourning passed on into Christian art. St John at the Crucifixion is figured with hand uplifted to his cheek. The well-known Penelope statue is one example of the same gesture. May I suggest here that the painted vase (Fig. 272) does not represent Phædra but the return of Ulysses? there are the idle handmaids, the well-wrought bed, and at the door Ulysses talking with the nurse. Cf. Darem. and Saglio, s.v. *Mendicatio*.

‡ Ludovisi Mars.

a spear of bronze, the holes for attaching which occur in a straight line slanting across her body. Around her left wrist is a snake which it has been said was merely a bracelet. If it is a bracelet (Fig. 78), there cannot be a doubt, I think, that this snake was thought of as alive or at least as significant of Athena. The arrangement is not stiff enough to represent metal, and the great gold and ivory statue in the interior of the temple had, besides the snakes of the ægis, others around both wrists, and still others knotted around the waist.\* This slim, dignified, girlish figure is exquisitely imagined. The head is boyish in its simplicity. The bearded god in conversation with her (9) is probably Hephaistos. (Fig. 75.) "It is supposed that his lameness may be indicated by the awkward pose of his right foot and by the staff on which he leans." I

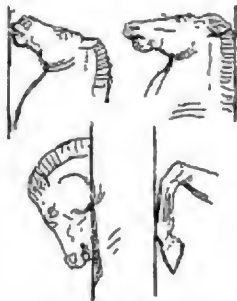


Fig. 82.—Frieze :  
Sculpture and Joints.

cannot see anything awkward in the foot, but the staff may serve to indicate the lame god. The last chief figure on the right (13) with Eros (14) beyond her, must, all agree, be Aphrodite. We now have three figures remaining between Hephaistos and Aphrodite. The bearded male figure (10) must be Poseidon, the only suitable name which remains. In his lifted hand he may have held a trident. The younger, radiant-faced god (11) must be Apollo (Fig. 79), and the goddess next to him (12) is probably Artemis, the most important name which remains, although she is often called Peitho, from her close association with Aphrodite. Apollo seems to have had a wreath.

The identification of this assembly of gods has taken a hundred years of discussion, but, after every possible combination has been suggested, it is now practically decided. These attributions were made in the following order:—*Stuart*, 1789: 5, Iris; 6, Hera; 9, Poseidon. *Visconti*: 3, Demeter; 7, Zeus.

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\* The bracelet idea seems now to be given up, and it is said that she holds her ægis under her left hand. This is very doubtful; all that can be said with certainty is that serpents play about her hand.

*Leake* was the first to name the six principal figures correctly: 1, *Hermes*; 2, *Dionysos*; 3, *Demeter*; 4, *Ares*; 6, *Hera*; 7, *Zeus*. *Hawkins* suggested 8 for *Hephaistos*. The German *Gerhard* then named 10 *Apollo*, 11 *Artemis*, 12 *Aphrodite*, 13 *Eros*. *Michaelis* was the first to name the whole of the second group with substantial accuracy, calling 11 *Peitho* instead of *Artemis*. *C. Robert* was the first who named the whole assembly correctly. The attributions were still argued about when *Furtwängler* said a few words which very much settled dispute, although no new identifications remained for him to make. Some English writers would still keep the question open in regard to one or two points, but I have no doubt that the names assigned by *Robert*, *Overbeck*, and *Furtwängler* will prevail.\*



Fig. 83.  
A Hand.



Fig. 84.  
A Stick.

Doubts have been expressed as to how far the immense mass of sculptures, some 50 pedimental figures and horses, 92 metopes, and 524 feet of frieze, can properly be assigned to *Phidias* at all. On this point we must take into consideration the difference between one man working alone—even though it be *Michael Angelo*, as is said, on the *Sistine*—and the master of a school. The metopes in this respect need hardly to be considered; a few words, a few sketches, and the great traditional technique, would soon settle all but a dozen or so of them. "In certain details of slight importance the assistants may have gone beyond the master's orders [or have dragged behind them], but in all essentials the design is his very own; that dominant personality which governed the frieze and the pediments, can, on the evidence of style and tradition, be none other than that of *Phidias*."† Again, it is said that these "mere architectural

\* The new British Museum Catalogue, May 1908, now accepts the identifications fully.

† *Furtwängler*. *S. Reinach* has also written to this effect. *Phidias* was chief of a school, like *Raphael* in the Vatican. Pediments, metopes, and frieze were all works of the same school.

sculptures" were in antiquity of little account as compared with the temple statues and bronzes of Phidias. Why then did Aristotle in a passage quoted by Visconti call Phidias a *wise stonecutter*? And may we not take this to be an allusion to the sculptures of the Parthenon?



Fig. 85.—Lyre :  
from Frieze.

As to the frieze, the more I have studied it, the more I see that as a matter of design it is less sculpture than relief painting, if I may make use of such a term. The method of composition, the rhythm of the lines, the heraldic pattern made by the horses' legs, the rapid sweep of the forms, have the closest affinity with vase-painting. (Fig. 80.) The frieze must have been cut from drawings made, "swift as a hawk's flight," on the marble slabs set together like a long roll of canvas—bold brush drawings putting down the forms like a herald and not by "outlines." To speak of models for such work, either small or big, is beside the point. The relief is all chisel work and chisel thought, not "a marble model of a clay model." The drawing (and Phidias was a painter) was the master's. For the rest a pattern panel or two struck off by such a "stonecutter," with inconceivable rapidity, some touches and talks—that is all that was required. All this need only fill the chinks of time, while the ivory statue and the pediments were in progress. On the production of the frieze hear Ruskin: "A great sculptor uses his tool exactly as a painter his pencil, and you may recognise the decision of his thought and the glow of his temper no less in the workmanship than in the design. . . . The sculptor [now] thinks in clay instead of marble, and loses his instinctive sense of the proper treatment of a brittle substance." On the Parthenon frieze the horses are in low relief, "yet by mere drawing you see the sculptor has got them to appear to recede in due order, and by a soft rounding of the flesh surfaces and modulation of the veins, he has taken away the look of flatness. He has drawn the eyes and nostrils with dark incision, careful as the finest touch of a painter's



Fig. 86.  
A Vessel.



pencil ; and then, at last, when he comes to the manes he has let fly hand and chisel with their full force ; and where a base workman (above all *if he had modelled the thing in clay first*) would have lost himself in laborious imitation, the Greek has struck the tresses out with angular incisions deep driven."

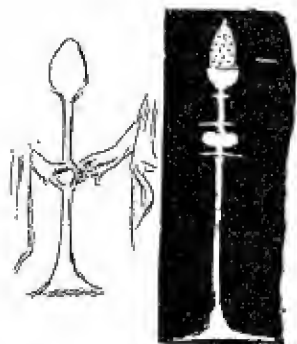



Fig. 87.—Incense Burner :  
from the Frieze and  
from a Vase.

It followed from the true method of marble relief that the original surface plane is made to take as much as it will ; this precious surface is indeed carefully preserved throughout as a fine water-colour painter will preserve the light in his work. The furthest plane or background is found anywhere in the thickness of the material where it is wanted, and does not occur at a constant depth. There are broad passages which are little more than incised on a flat surface. (Fig. 81.) The forms are, as it were,

seen *through* a plane, they are not attached to a plane. The system was, as Dr Murray has well expressed it, to "broaden the nearest plane," but he seems to have regarded it as a choice of taste not as a law of fine craftsmanship. Marble relief tends properly to this type of section , modelled relief to this other A. One is left from a level surface, the other is added on a level surface.

Several years ago Dr Waldstein brought into prominence some fragments of small terra-cottas which had on them parts of some of the figures of the assembly of gods, and put forward the view, although cautiously, that they might have been parts of original models for the frieze. Furtwängler, amongst others, accepted them as at least of ancient work ; but they are now considered to be taken from a cast made for Choiseul Gouffier about 1787. It happens that the original slab which these terra-cottas represent has been much injured, and the early plaster



Fig. 88.

casts taken from it have been lost. Now the heads and other details on the terra-cottas are remarkably good, and it seems to be held that the slabs from which they were taken must then have been far more perfect.\* I cannot, however, agree with this view, and I see no difficulty in thinking that a skilful modeller



Fig. 89.—W. Metopes, No. 1 : Restored.

working on casts of the slabs as now in the Museum could, from their indications, make as true a restoration. In the text of the "Museum Worsleyanum" we are told that this particular slab was lying on the ground outside the west front in 1786. The slab itself shows that it has been subjected to treatment different

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\* Collignon.

from the others. The features and forms are destroyed, not by decay, not by sudden violence, but by long-continued petty injury. When Pars drew it in 1765 it was already in the state that it is in at present. It follows that the terra-cottas, good as they are, have no record value.

A study of the jointing suggests some ideas as to the procedure in the production of the frieze. While it seems plain that the subject must have been generally settled before the slabs were cut, yet the detailed design certainly follows the slabs, and I cannot doubt that it was drawn on them in place. In regard to the first point, the slabs of the east front are longer than the rest, the central stone being over 14 feet in length.

Although the composition of this front is regular, the slabs themselves are irregular in size. At the ends, and also at the ends of the west frieze, there are narrow panels, and three of them take only single figures, for which we may suppose they were intended.



Fig. 91.—W. Metope, 3:  
from Pars.

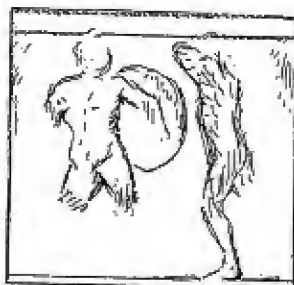


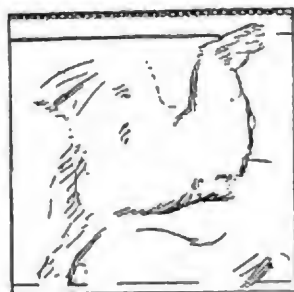
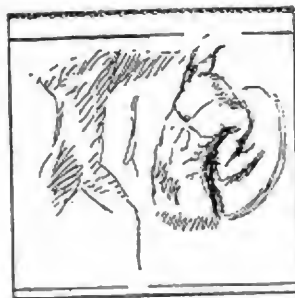
Fig. 90.—W. Metope, 2:  
from Ebersole.

Each slab on the west front contains a separate group, and the size suits them so perfectly that we must think that the subjects were settled before the stones were cut.

That there was revision of design to suit the jointing is, however, even more certain, and several of the horses' heads and legs were clearly spaced so as to avoid the joints, as, indeed, every part which they passed through has been specially considered. (Fig. 82.) In two or three

cases the divisions cut through a man's head, or a horse's hoof, but exactly in the middle, and with evident adjustment. Along the south side there are generally two and three horses' heads and necks to each slab until the chariots are reached, and then nine or ten successive slabs are occupied by as many chariots.

The marble was finished to a polished surface. This is best seen on the slab at the Louvre, which is perfectly lighted. The details are wonderfully true and minute. The hands all seem separately observed; the veins, creases, and nails are indicated. (Fig. 83.) The sticks on which the magistrates lean are knotted. (Fig. 84.) By comparing two or three slabs, the forms of the



Figs. 92 and 93.—W. Metopes,  
4 and 8: from Pars.

(Fig. 85), vessels (Fig. 86), and incense burners (Fig. 87) can be made out. How one of the latter was carried appears better in Stuart than on the slab at present.

It has been remarked that the compositions of the pediments have centres of action of which the remoter figures are unconscious, and that between them is a growing movement of interest. In the frieze we find much the same principle. First, there are standing figures, then rapid movement towards the centres of the long fronts. At the east end the waiting figures are partly unconscious of the procession, and between them and it is a waking of interest. In the group of gods, again, we have the interest of some engaged, while the inner ones are as yet unconcerned. In the frieze there are nearly 200 horses in all varieties of action, which are observed with the keenness of sight

of a Japanese, and set down without "the smallest symptom of constraint; for no less attention has been paid to the beautiful realities of life than to ideal beauty."\*

None but "the horse-loving Greeks" could have carried through such a work. The mere following and keeping account of the number and directions of the men's and horses' legs is

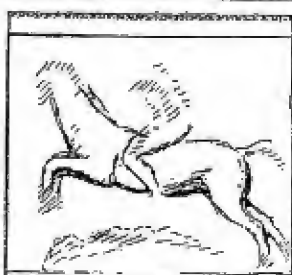
\* Dodwell.

bewildering.\* The crossing of the legs at different angles confuses the eyes, so that an illusion is given which recalls the very effect of the march of cavalry. The troop of horse seems to go by with a clatter.

### THE METOPES.

The metopes were 92 panels, approximately 4 feet square, set above the stone beam of the outer order, 14 at each end, and 32 at each side. These sculptures are in the highest relief, some of the figures, indeed, are almost detached. There are fifteen originals from the south side, and two casts from the north-west corner, in the Museum. Many of those once at the middle of the north flank are entirely lost, and about as many on the south side are only known through Carrey's drawings. Those which still remain on the building are much decayed, and, indeed, there was considerable loss from exposure during the last century.

THE WESTERN METOPES are now always described as a battle of Greeks and Amazons, but Beulé long ago suggested that the subject was a battle of Greeks and Persians, and Leake described them cautiously in a way that would admit of this interpretation. He says: "The long dress of the vanquished in 14 and the shield in 10 are barbaric, and apparently Oriental. It



Figs. 94 and 95. — W. Metopes, 9 and 11: from Pars.

\* Dr Murray has found some faults in regard to this. Of the last horseman on the north side he says: "We see how possible it is to get into difficulty; the man's leg ought to have been visible across the belly of his horse." But on the marble the rider's leg is plainly to be traced, as may be seen in Plate XXI., "Museum Marbles." He also complains that some tails are omitted, but this is only so where the tails of neighbouring horses are held so high that they, too, would be hidden in the same position.

is probable that the whole front related to the warlike exploits of the Athenians." The idea that the foes were Amazons arose,

doubtless, from the fact that the Persian warriors wore skirts, but this inference applied at first only to two of the panels, 10 and 14, which in "Museum Marbles" are said to represent Greeks and Amazons. In Cockerell's restoration only the last figure of all is shown as female. The general arrangement of the series put a horseman, usually with a fallen antagonist, in each alternate panel, the others having pairs of warriors on foot.

They have been recently examined from a scaffolding by

Fig. 96.—W. Metope, 10: from Ebersole, with Persian shields from Vases.

Mr Ebersole.\* He considers that the subject is most probably the Amazonomachia, although his detailed description in no way substantiates his opinion. A large number of the figures are certainly men, not one is obviously a woman, nor, curiously enough, does he suggest of any one that it is a woman. According to custom it should be the Amazons who ride, yet several of the riders were almost nude, and the wounded antagonists are also nude, or nearly so. Not one rider seems to have been getting the worst of the combat, indeed, all the horse groups were of the usual victory formula where a warrior rides down a

foe. Surely all this can only be explained by supposing that these metopes did not represent a battle of Greeks and Amazons,



Figs. 97 and 98.—W. Metopes, 13 and 14: from Ebersole.

\* *Am. Journ. Archaeol.*, 1898-99.

and the probability is that the foes were Persians. Professor Gardner has remarked generally of the sculptures: "By their choice of all these subjects there is little doubt that the Athenians intended to depict to the glory of their goddess the mythical prototypes of their own victories over the Persians which were still fresh in their memory, and such a theme was appropriate to the Parthenon, built as it was from the funds subscribed by the Greeks against the common foe, but no longer necessary.\* Yes, but would not these allusions best be gathered up by a sculptured battle with the Persians themselves? It was only fitting that, on the Parthenon itself, as on the Temple of Nike, the triumph over the Persians should be celebrated amongst the acts of the Greeks. Taken in relation to the subject of the pediment above, which showed how Athena took charge of the land, these metopes suggested how, by her help, it was retained.



Fig. 99.—W. Metope, 1: from the Cast at the Museum, slightly restored.



Fig. 100.—Amazon: from Athena's Shield.

I have found, in some drawings of these metopes, made by Pars in 1765, when they were in much better condition, some further confirmation of this view. The metope 1, by the north corner, is a magnificent Greek horseman (in the Museum Catalogue called an Amazon with a ?). (Fig. 89.) It is found practically copied in the tomb-relief of Dexileos (B.C. 394).† 2 is a combat on foot (Fig. 90), 3 is a noble group of a mounted Greek and a fallen Persian, of which Pars gives a valuable drawing

\* E. A. Gardner's "Athens."

† Collignon, ii., fig. 89.

(Fig. 91) inscribed "West front, 3 from northern end"; 4, combat on foot, of which Pars also has a drawing (Fig. 92); 5, very like 3; 6, 7, and 8 are very decayed, but there is no doubt that 6 had a foot combat. Mr Ebersole thinks that there was alternation between rider and foot groups throughout, and thus as the next, 7, contained a rider, although the subject of 8 could not be made out, he decided that there could not have been a horse, and he suggested two warriors and a rock in the middle. This does not agree with the evidence of Pars' sketches, which show that 8 did contain a rider and fallen foe, although the subject was, even when he drew it, much defaced. (Fig. 93.) If 7, 8, and 9 formed a strong centre, all having horse-groups, the reason for reversing 11 becomes apparent, as it formed a pendant to 5, and the scheme from 4 to 12 becomes a balanced composition.



Fig. 101.—Greeks and Persians: from Nike Temple.

10 is a combat on foot (Fig. 96). Of this one Leake remarked that the shield seems to be Persian, and Mr Ebersole's photograph shows the Persian "perme." 11 is a horseman facing to the left and a fallen foe. Pars gives a sketch of this. (Fig. 95.) 12 is nearly effaced, but enough remains to show that it followed 2. 13 is, again, like 3. 14 is a combat on foot, Beulé properly described it as a Persian on his knees before an Athenian. Pars has a drawing of it. Mr Ebersole mistakes, I think, the action, in supposing that the arms of the fallen foe followed around the rim of the Greek's shield. The hands really caught at the arm of the Greek just above his own head. (Fig. 98.) This composition is found repeated again and again on the Phigalean frieze, and on the vases.

Since getting so far I have examined the two casts of the metopes against the north-west angle, and am confirmed in the



view set out above. In the last panel of the north side the majestic figure, seated on the rock, clothed in a beautiful fleecy chiton, and with arm upraised as if it held a spear, must be Athena. (Fig. 111.) The other hand may have held her helmet, for she is here unarmed, "in peaceful possession, tranquilly watching over the beloved city." Compare the Athena of the frieze of the Theseum, where she is also watching a battle from her rock. The girl who quickly advances from the left is clearly a messenger. It is a magnificent sculpture, and 'tis pity it cannot be better seen. The rider 1 of the west front is certainly no Amazon; the bony and muscular forms and strong hand and foot show that

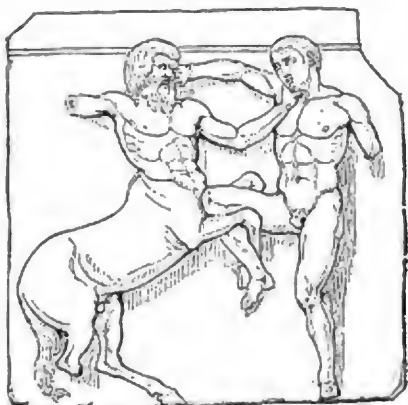


Fig. 102.—S. Metope: Centaur Battle.

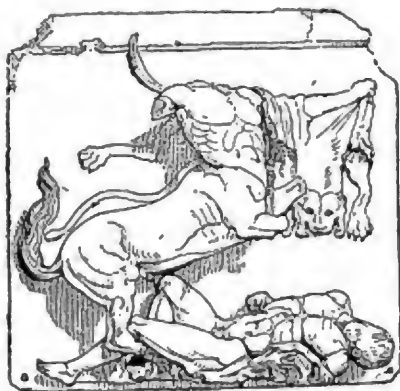


Fig. 103.—S. Metope: Centaur Battle.

it is a man. Both shoulders were covered, and the dress is the ordinary short men's tunic and a mantle flying from the shoulder. (Fig. 99.) We know from Athena's shield and from the copy of the Amazon of Phidias how the sculptor of the Parthenon marbles represents Amazons. (Fig. 100.) A still further confirmation as to Persians being represented on these metopes is offered by the sculptures of the Temple of

Nike, where several of the groups figuring combats of Greeks and Persians obviously follow the western metopes and furnish the closest parallel with them that can be found. (Fig. 101.)

THE SOUTHERN METOPES for the most part contain sculptures of the legendary combat of Theseus and the Lapiths with the Centaurs. (Figs. 102, 103, 104.) The first twelve and the last eleven or twelve deal with this subject, while in the centre there is a separate group of eight or nine, according as its end one is read to go with one or the other series. These seem to relate to the early legends of Athens. In the Museum Catalogue we read : "The nine intervening metopes have been ingeniously interpreted as relating to the story of Erichthonios, the mythical founder of the Panathenaic procession." (See Pernice, 1895.) Bronsted long ago suggested a similar reading of the central group. The panel,



Fig. 104.—S. Metope : Centaur Battle.

which is the last of these or the first of the twelve which form the third group, contains two women on either side of an archaic statue. Pernice reads this subject as two maidens adorning the Xoanon of Athena, and makes it the last of the central set. The sculptures of the third group, as already said, formed a continuation of the Centaur battle, the chief incident of which was an attack on women. A frieze from Bassæ, also at the Museum, which in

much admittedly derives from the Parthenon, gives a prominent place to a similar episode. Two women, who have taken sanctuary at a sacred image, are attacked by a Centaur, who is himself attacked by a Greek (Theseus?), while a goddess, in this case Artemis, gallops up to the rescue, with Apollo in her stag-drawn chariot. The panel at the Parthenon must, it seems to me, belong to the Centaur series, and must be the first of a second group of twelve. It furnishes, in fact, the episode around which the action develops. On either hand, in the separated groups, are two panels of Centaurs carrying away women, while further towards the angles there are no women. The southern metopes were thus divided up into groups of 12 : 8 : 12 ; and we

may suppose that the central series had a background of a different colour to distinguish it from the rest.

The subject of the end groups would not have been a mere struggle between Lapiths and Centaurs, but the result of the intervention of the goddess for those who appealed to her image. The subject is—in general terms—sacrilege or violation of hospitality, and what followed. The best version of the subject which occurs on a vase is figured by Miss Harrison;\* here the struggle at the domestic altar by the door to the inner palace is again the chief episode; while in Ovid the tearing down of the altar also comes in. The panel in question on the Parthenon must represent the bride and her mother appealing to an image of Athena, and thus was the story brought into relation with the goddess. Similar subjects often occur on vases, it may be called

the Palladium formula.



Fig. 106.—Mercury and Argos : from a Vase.

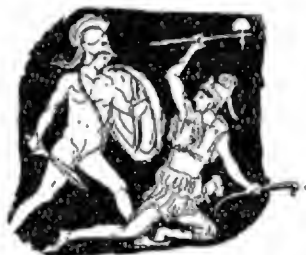


Fig. 105.—Greek and Amazon : from a Vase.

The notes of the compositions of the central group given by Carrey are enough to show that they must have been of great beauty. On 19 was a stately woman's figure which looks like one of the "maidens" of the Erechtheum, and a figure in 20 looks as if it might have been the original of the beautiful Lansdowne grave slab.†

THE EASTERN METOPES have not, so far as I know, been re-examined since Michaelis published his unsatisfactory representations. Leake‡ and Cockerell had assigned meanings to some of the panels which are concerned with the deeds of the gods, and especially of Athena; Petersen and Robert have

\* "Athens," fig. 37.

† "Burlington Club Catalogue," No. 50.

‡ Leake's description is full and valuable if it is independent of the Elgin drawing mentioned below.

sought to identify all the subjects, and the latter proposes a series in which the gods occur in the following order: Hermes, Dionysos, Ares, Hera, Zeus, Athena, Heracles, Apollo, Artemis, and Poseidon; while the four chariots belong to as many of the gods. He bases this reading largely on the order of the



Fig. 107.

E. Metopes, No. 12.

gods on the frieze within, so it is in great part an assumption. The only new, or old, fact I can bring forward is that Cockerell's scheme is taken over from the restoration of the east front made by Lord Elgin's artist on a large drawing at the Museum made about 1801. Although there must be a good deal of conjecture in these restored panels, they were based on careful observation, probably made from a scaffold, and give data when the panels were in a much better state than when the drawings published by Michaelis were made. No. 1 has two struggling figures, one of whom covers beneath the victor. Designs of this type are so frequent that no interpretation can be certain. (Fig. 105.) Hermes and Argos are sometimes so represented, as on a vase at Oxford. (See Fig. 106.) No. 2 does appear to represent Dionysos, at least there is a panther on it. No. 6, as figured by Laborde and Michaelis, is in the attitude of the man restraining a bull on the frieze, but prostrate in front; according to the Elgin drawing there was another figure.\*

No. 7 looks as if it might be Athena and Pegasus. Athena driving winged horses appears on the Cnidos Treasury at Delphi. No. 9 seems to have had a Hercules, and may well be Hercules and Apollo struggling for the tripod. As restored on the Elgin drawings



Fig. 108.

E. Metopes, No. 14.

\* If from these indications and divergencies we might assume that a bull attacking a man was being held back, no subject would probably suit so well as one on a vase published in the *Hellenic Journal* for 1889, where Athena is rescuing Theseus from a bull.

it is almost exactly like this scene as represented on early vases, and it occurred in the pediment of the Delphi Treasury. No. 12 seems to have contained Athena. (Fig. 107.) No. 14 represented a chariot rising from the sea. (Fig. 108.) The Elgin drawing is clearly very accurate in some points, which can be tested.

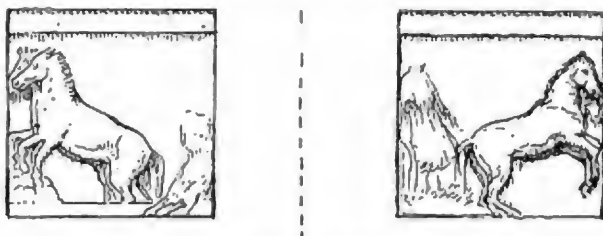


Fig. 109.—Metopes at N.E. angle.

Thus, on the last, some small fish are shown, which also appear in Michaelis, and to the left is a water bird which is only a shapeless form in the drawing of the latter. Both of these points are omitted in "Museum Marbles." This seems a direct rendering of the passage in Homer (*Iliad*, 13), where Poseidon drives his swift flying gold-maned horses over the sea, while dolphins sported beside the chariot. These eastern metopes cannot be profitably discussed until every trace of what actually remains can be brought into comparison with these restorations made more than a century ago.\* Fig. 109 shows the last metope on the east, seen in relation to the first on the north.



Fig. 110.  
N. Metopes, No. 29.

THE NORTHERN METOPES are so greatly decayed, and so many of them are lost, that it would seem hopeless to make anything of them. Michaelis, however, had the good fortune to find the subject of two which adjoin, Nos. 24 and 25, apparently represented on a vase painting, which figured a scene at the fall of Troy. Helen is shown before a sacred image, while Aphrodite sends Eros towards Menelaus, who, according to the

\* The composition of 2 and 12 may be compared with two Selinus metopes (Collignon).

story, was thus restrained from killing his wife. This interpretation Dr Murray would not accept ("Parthenon Sculptures," 1903). He proposed a battle of Centaurs for this side too, remarking that "there were too many women about for the Troy war." But the subject suggested was not a Troy battle, but incidents after taking the city. On a vase in the Museum \* we have Menelaus and Helen again, Ajax and Cassandra, and other similar groups.



Fig. 111.—N. Metopes, No. 32: Slightly restored;  
from Drawing in Elgin Collection.

The figure from the vase which Michaelis gave seems to me entirely convincing.

With this clue it is easy to suggest that 29 must be a fugitive from Troy, and Dr Robert, comparing it with the description of the painting by Polygnotos of the fall of Troy, reads it as representing two Trojans who were escaping on one horse

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\* F. 278.

when they were killed by Neoptolemus.\* It was the last act of war, and so would appropriately come here. I do not feel sure of the two riders on one horse, as shown by Michaelis, but of the action of the falling horse there seems to be no doubt, it is rendered clearly on Lucas' model at the Museum made before 1845. (Fig. 110.) Compare the vase figured by Reinach,† where a Greek, called by him Achilles, encounters two Trojans, one of whom rode a horse which has fallen.

I have found a similar group on a vase figured in the Berlin *Jahrbuch* of Archæology,‡ which again shows a Greek attacking two Trojans, one of whom is on a falling



Fig. 112.  
Victorious Athena :  
from a Vase.



Fig. 113.—Athena on the Acropolis : from  
a Vase at the British Museum.

horse, whose action is singularly like that on metope 29.

The first panel of all on the north side contains a chariot apparently driven by a woman. (Fig. 109.) Possibly this may be Athena setting off to witness the fall of Troy. The last metope, No. 32, has a dignified woman's figure sitting on a rock, while a messenger runs up to her. (Fig. 111.) Compare this beautiful panel, of which we fortunately have an old cast in the Museum, with the

panel at Olympia of Athena seated on the Acropolis.§ I give also a sketch from a vase|| in the Museum where she sits apart

\* "Die Iliupersis des Polygnot" (1893), and Fraser's "Pausanias."

† Répertoire, i. 411.

‡ 1905. Plate 7.

§ Collignon, i., fig. 223.

|| Pedestal 13.

on the Acropolis, as indicated by an olive tree and a pillar, watching from afar the fall of Troy. "She has laid aside her helmet, and rests triumphant at the conclusion of the war." (Fig. 113.) The figure itself, on the vase, almost seems to be drawn from the Athena of the eastern frieze. Compare also the figure of Athena seated on a rock watching a battle on the frieze of the Theseum, which I find that Sauer has restored as holding her helmet in her hand. Before seeing this, I had come to the conclusion that this was probably the action of the Athena of the Parthenon metope. (See Fig. 112, from a vase.) The messenger on this metope resembles a figure on the Theseum, from the *last* of the series representing the Labours of Hercules.

If we accept it that the last metope on the north represents the rock of the Acropolis, then the warrior on No. 1 west, who never



Fig. 114.—W. Pediment : from Carrey's sketch ;  
and Suggestion as to Right-hand Group.

seems to have been opposed to an enemy, may be supposed to be riding out from Athens to join the battle. It is worth some tiresome concern with minute points, to bring out the result that the western metopes which were first seen on approaching the temple were a memorial of the victory over the Persians, and that those on the north, which were passed in reaching the entrance, recalled the War of Troy, while the less seen south side celebrated the primitive legendary battle of Athenians and Centaurs. Those of the east were the deeds of the gods themselves.

### THE PEDIMENTS.

Most of the surviving sculptures of those which once filled the pediments are now in the British Museum. They are, by common admission, the noblest images wrought in all time.



They are at once severe and sweet, great yet graceful ; they are large in absolute scale and in design, but simple in conception, and most masterful and energetic in handiwork.

We all know that the figures are wonderful, but it is only necessary to see them from some unaccustomed point of view to feel it again as a fresh surprise. To examine them from steps is a revelation, the muscular back and shoulders of the Theseus, the soft rounded arms of the Demeter and the Wife of Cecrops—strong, yet almost flowing, in extraordinarily beautiful curves—the bare shoulder of one of the Fates, the startled horses of the Sun, the perfect pose of the Ilissus, the variety of texture and fold in the draperies of the goddesses, the dainty buttoning of the sleeve, the big folds of skirts and mantles, the great, restful forms, and the resistless energy of the cutting are all wonderful and lovely. Most wonderful of all is the great spirit which fills out and transcends the forms. They are not mere statues, they



Fig. 115.—W. Pediment in 1749 : from Dalton's Sketch.

are creatures proper to temples born in marble. The Fates are as majestic as mountains.

"Those three serene, beautiful figures—Fates they must be—have the quietude of fate. They fill the background of my mind constantly and wonderfully with their passionless power. They make me feel that fate is neither cruel nor kind, only the inexorable law fulfilling itself."

The general meaning of the compositions in the pediments are known from a few lines of Pausanias, where he says that the Birth of Athena occupied the eastern front, and that the Dispute of Athena and Poseidon for supremacy in the land of Attica, filled the western. Valuable data in regard to the now lost figures are contained in some careful drawings made about 1674, and usually called Carrey's drawings. Other details have been made known by a minute examination of the remnants and marks on the pediments themselves, and some further light may

be gained by comparison with the lately discovered sculptures of Olympia, which, although they are more archaic in style, have much in common as compositions with the pediments of the Parthenon. The relation of the two works is not settled, but undoubtedly one of them derived much from the other.

It is usual to describe first the western gable of the Parthenon, as it is the first seen and more is known of it, especially through Carrey's drawing (Fig. 114), best published by Omont.

This drawing, notwithstanding a quality in some degree repellant, proves to be remarkably trustworthy, and, after one has got accustomed to its style, truth is evident in every touch. Other drawings by Dalton, 1749, and Pars, 1765, are helpful; and analogy with vase paintings and marble reliefs has reflected a light on the design. (Fig. 115.)



Fig. 116.—Hercules Relief: Paris.

An introduction to the subject is best gained, I think, by a comparison of the statues in the Museum with the model made by the sculptor Lucas, about 1844, where the facts are rendered with much feeling and fidelity. Useful collections of illustrations, including

reproductions of Carrey's drawings, are contained in Dr Murray's volume, 1903, and in the excellent Museum Guide. (The last edition, May 1908, is just published.)

In the middle of the western pediment, under its peak, stood Athena and Poseidon, in energetic attitudes of protest and surprise. Between them was probably seen the olive tree which she had just called into existence. Right and left of this pair were their chariots, with rearing, frightened horses. The heads of the right-hand pair, and the place they occupied, were identified by Sauer. Under Poseidon's chariot both Carrey and Dalton show a fish, probably a dolphin, the recognised symbol of the sea.\* Behind the chariots on each side were groups of spectators,

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\* On a vase in the Museum Poseidon and Amphitrite carry dolphins, and a fish is often shown under the bull which bears off Europa.

amongst whom were children. The figures nearer the chariots were mostly seated, in the angles were reclining figures, on the left a nude male, on the right a draped female. Throughout is variety of incident, yet balance is maintained. On either hand Carrey's drawing shows a space which seems to interrupt the series of figures. (X and V, Fig. 114.)

The evidence given by the marks on the pediment as to the two gaps is not conclusive. Sauer put a figure on the left but not on the right. Furtwängler argued from the same traces that figures were called for in both places. Dr Murray rejected both.\* More lately still, Schwerzek has again rejected the

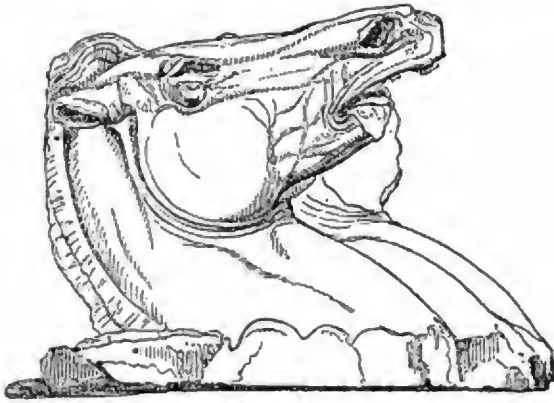


Fig. 117.—E. Pediment : Horses of the Sun.

figure on the right. The question needs to be approached apart from theories of interpretation, which are apt to bias the judgment. The figure on the left is now generally accepted, and on the broad grounds of the architectural balance of the lines and quantities in both halves of the pediment, it seems to me that a figure should be assumed on the right side. With the exception of these spaces the figures are set close together, even overlapping one another, as if the intention had been to cover up the whole field of the pediment. Leake accepted both the proposed figures. Cockerell, in his restoration, rejected the one

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\* He speaks of them as "corresponding gaps." If they corresponded, hardly a doubt would remain, but they did not.

on the right, but spread the leg of the next figure beyond the space on the right, so as to partly fill up the gap. But the actual figure since found shows that its leg was gathered close under the body; and this compactness calls for a figure closely adjoining.

I have tried to test the question by comparing the known position of figures on the right and left of the pediment. In the diagram, fig. 114, the figures V and W, were traced in their proper situation from Sauer's Survey. The tracing paper was



Fig. 118.—E. Pediment : Dionysos.

reversed, and the two figures, B and C, were then traced from their proper positions on the left, as measured from both the centre line and the angle. The figure C, on the left, which corresponds with that postulated on the right, fits exactly where it should. Surely, if there had been no such figure in the space on the right, the two known figures next the angle would have been spread a little towards the centre. Again, reasoning from the balance of the composition, it would seem that there must have been a pair of reclining and crouching figures in each remote angle—that there must then have been a pair of seated

and rising figures on each side ; on either side, nearing the centre, a group made up of a woman, a nude figure, and a second woman followed, then came the chariot groups. Or, reckoning inversely from the centre, point by point, there would seem to have been balance. The nude figure on the left side surely must have been a *pendant* to the other on the right, and so of the next figure it rests on. Then there is a similar woman's figure on each side. Then, on the left, is an important male figure, and on the right a space. Beyond these is a figure



Fig. 119.—E. Pediment : Demeter and Persephone.

on the right, and on the left a space ; and finally, on both sides, are similarly reclining figures. Altogether, it seems to me, that there must have been a series which we may represent thus:—

1. x. 3. 4. 5. 6. 7. 8. 9. 10. 10. 9. 8. 7. 6. 5. 4. γ. 2. 1.  
of which (2) on the left, and (3) on the right, have fallen out.

Accepting the empty space on the right, there would be only nine figures on that side, while there were ten on the left. From Dalton's drawing of 1749 (Fig. 115), we may see that the falling of blocks of the pediment probably destroyed figures on both the right and the left ; the floor of the pediment is also broken

away at these points. Further, from Dalton's drawing, we know that the figure 4, next to the right hand gap, had fallen before he made his drawing. Clearly this was a point of weakness. The question is complicated by the fact that the great woman's figure, next behind the right chariot, had two nude children



Fig. 130.—E. Pediment : "Iris"  
(Ilithyia?).

associated with her. It may be claimed, and with this view I am disposed to agree, that they were only emblems too small to count amongst the figures; on the other hand, it may be held that these *two* compensated for one larger figure on the left. Taking this view, Schwerzek has minimised the importance of the left nude figure, but other difficulties spring up regarding such a solution. I feel that the gleaming bodies of the nude figures must have been most important points in the composition, and we should naturally expect that one on the left balanced one on the right. I must leave this tedious question without having found anything which I can consider a proof, but I incline to the view that the evidence points to there having been figures in both

the gaps shown in Carrey's drawings.

The figure of "Victory," so named because the mortice-holes in the shoulders, showed that it had had wings, has usually been described as having belonged to the east pediment, although many writers have raised objections. The reasons advanced in the last edition of the Museum

Catalogue, shows that this theory has entirely broken down, and it is now admitted that the figure is that represented on Carrey's sketch, close by Poseidon's charioteer. In the *Hellenic Journal*, November 1907, Dr Cecil Smith writes, that according to the letters of Lord Elgin's agents, the figure was found under the west front. It is suggested that the figure cannot be a Victory, as it is on the side of Poseidon, and Discord is proposed.\* However, Furtwängler, seeing the Victory difficulty, had said, that, as Athena had Hermes for a supporter, so Poseidon had Iris, and he gave instances of this parallelism between Iris and Hermes.†

The interpretation of the scheme of the sculptures by Furtwängler, which accepts and restores figures in both the gaps of the pediment, seems to me the most consistent and dramatic. Both gods claim the same land, and both are standing as nearly as possible on the same spot. Both produce their tokens of power, and both draw back. Difficulty of interpretation arises in respect to the side figures, the spectators of the main action. According to Furtwängler, as it was done in the sight of men, the side figures represent the witnesses—the primitive dwellers on the Acropolis. The germ of this theory is already found in Visconti, who conjectured that the figure near the car of the goddess might be Cecrops, "the native hero of the Athenians, whom they revered as a god, and who bore witness to the prodigy." Leake, who, after all, may be found to have been the observer who made the most identifications of the whole mass of Parthenon sculptures, extended and, to a large degree, rightly applied this theory. He named the man's figure next to the left hand gap, Cecrops; and the women between him and the chariot, his daughters. "According to one version of the fable," he writes, "Cecrops testified that he had seen the olive planted by Athena; according to another version, not only Cecrops but his successors, Cranaus and Erechtheus, were present. It is this last form of the story which Phidias had represented." As he accepted

\* The only late Discord I know is not winged (Furtwängler's "Vases," 30).

† That the figure is probably Iris is allowed in the last edition of the Museum Catalogue.

Visconti's suggestions as to the figures on the right half of the pediment—Latona and the rest—he named the statue on the left half, and next to the car of Athena (now Hermes), Erechtheus. With the exception of this, the Cecrops and family identification is now generally accepted, and the present British Museum scheme is practically that of Leake. Furtwängler, starting from the Cecrops identification, would make both the right and the left hand groups "the original dwellers on the citadel rock who witnessed the visit of the two deities, and who



Fig. 121.—E. Pediment: A Fate.

first instituted their worship, and it is they who have the best right to be represented here as witnesses." As behind the chariot on one side were Cecrops and his family, so on the other were Erechtheus and his daughters; he having occupied the position of the right hand gap on Carrey's drawing. One of the daughters of Erechtheus has a nude figure on her lap, "her son Ion, father of the Ionians," the two forming a group like another, which has been found from the frieze of the Erechtheum.\*

We come now to the angle figures, the one of which to the left has usually been taken for a river-god, Ilissos or another.

When we find that Pausanias described one of the pediments at Olympia as being bounded by two rivers, there seems to be little room for doubt, and when, further, we note how later river-god statues have followed this type—the "Nile" (at Rome), for instance, is very much a traditional copy of it—the identification

\* This nude figure has been discussed, *see* Miss Harrison's "Athens." Sauer claims to have identified parts of it, and that it was a male figure. The new B.M. Guide rather overstates that it was most likely female.



seems complete. My only doubt had been in regard to the figures at the right hand angle, where the outer figure is a female turning back and conversing with a male. He is said to represent a river, and she the fountain Callirrhoe.

This difference between the two angle figures prevents our calling them "river-gods"; and "a river-god and fountain nymph" is perhaps over elaborate. Furtwängler takes them to represent other primitive spectators. That such reclining figures need not represent Rivers is shown by Fig. 116, which seems to be founded on the Parthenon statue. Taking Furtwängler's scheme altogether, the reply of Dr Murray that the whole right hand



Fig. 122.—E. Pediment : Other Two Fates.

group of spectators might reasonably be taken "as nymphs or such like on the coasts of Attica" is not convincing.

The strength of Furtwängler's interpretation is that the sculptures do not according to it represent the strife of Athena and Poseidon as a mere episode, with spectators accidentally drawn together, but it is the story of the Acropolis itself, of the Fathers of the people and of the covenant Athena made with them, the token of which was the sacred olive tree. "Phidias gave form to that which was in the heart of every Athenian."

The subject which filled the eastern pediment, the birth of Athena, has been more irrecoverably destroyed in regard to the central statues than that of the western pediment, although the most perfect of all the remaining figures come from the angles

of this composition. The comparison, with certain reliefs, and Sauer's careful examination of the pediment itself, seem to show that at the left of the centre was Zeus, enthroned in profile, and in front of him Athena. Furtwängler suggests that the Medici torso represents the goddess of this pediment.\* At the two extremities were the rising Sun and the setting Moon. (Fig. 117.) These last, and the three and four next figures on either hand, are in the Museum. The three colossal figures

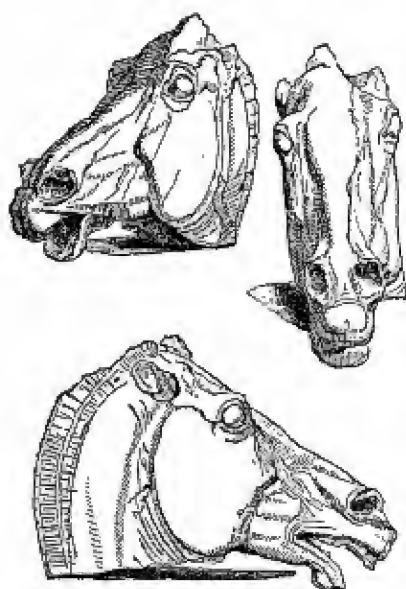


Fig. 123.—E. Pediment :  
Selene's Horse.

on the right were called the Fates by Visconti a century ago, and the relief at Madrid which, it is allowed, derived from the pediment, also has three figures which are shown by their emblems to be the Fates. (Figs. 121, 122.) This, we may be sure, would be held by Visconti to be a striking proof of the truth of his ascription, which has been accepted and reinforced by Furtwängler. Sauer, however, and others have made various objections. About the latest theory is that of Studniczka,† who, starting from the assembly of gods of the eastern frieze—to which, as we have seen, Robert had already

related the sequence of the acts of the gods in the eastern metopes—considers that the twelve great gods were represented in this pediment. He also goes back to the old ascriptions, Dionysos, Persephone, and Demeter, for the three figures on the left, who follow the rising Sun, and whom Furtwängler called Kephalos and the Horæ. Two of the "Fates" (Fig. 122) are, according to him, Dione and Aphrodite.

\* "Intermezzi."

† Berlin Arch. Inst., xix., 1904.

It may be recalled that Falkener, writing about 1850, in the "Classical Museum," suggested that a relief of Zeus and Hephaistos at Rome represented the left hand part of the central group. This was a remarkable intuition, for a similar pair of figures are on the larger relief at Madrid, which is now generally accepted as an authority for the pedimental figures. The best starting point for the interpretation of the sculptures of the eastern gable would seem to be other representations of the birth scene. Reinach, in his "Répertoire" of painted vases, 1899, gives eight versions, and another, still more important, is on the just-mentioned marble relief at Madrid. This last selects the moment when Athena of full stature confronts Zeus, and it probably not only represents the Parthenon form of the story but derives from it. All versions agree in having Zeus seated facing to the right; all, except the marble, agree in having Ilithyia present, the goddess who attends at births (Fig. 124); one vase has her only besides Zeus and Athena. Most, except the marble, have several gods attendant on the scene—Apollo, Poseidon, Hermes, Hera, Hephaistos, Ares, Dionysos, Demeter. On the marble and one vase appear the three Fates. We gather from this that the birth of Athena was a great traditional subject, for most of the vases are earlier than the Parthenon. Phidias might cast it into a classical form, but he might hardly vary outside a limited range. The existing figures may be conjectured to be anything, but the evidence should compel us to take the identifications which agree best with the tradition.



Fig. 124.—Zeus and Ilithyia: from a Vase at the British Museum.

Zeus must have been enthroned to the left of the centre facing to the right; next to him must have been Athena and Hephaistos. The existing noble triad of goddesses to the right should be the Fates, as proposed by Visconti. The pair to the left should be Demeter and (probably) Persephone, as many have thought. (Fig. 119.) The reclining god still further to the left must be Dionysos. (Fig. 118.) He *might* be Theseus,

Hercules, Kephalos, or Pan (*cf.* the coin of Pandosia), but if we are to rest on *evidence* he must for the present be known as Dionysos, and should be so called. The figure comes over the exploit of that god in the metope. He comes next to Demeter as on the frieze. The attitude is repeated by the Dionysos of the monument of Lysicrates, on a relief from the Piræus and on a vase (*J. H. S.*, vol. 25, plates). Furtwängler claims that it should be Kephalos, because it was shod, but the Dionysos of the Kertsch vase is also shod. The frightened girl near the centre may be a subordinate figure, like Hebe, attendant

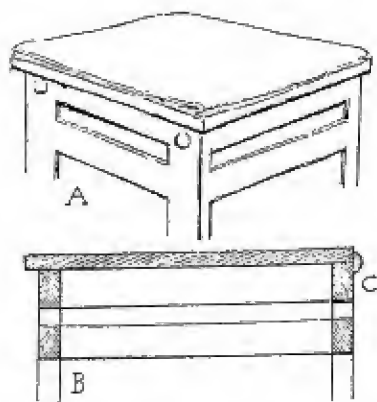


Fig. 125.—Seat of Demeter and Suggested Interpretation.

on Hera, but if she is to be regarded as one of the chief actors, and to this view I incline, it can hardly be any other than Ilithyia. (Fig. 120.) On the latest of the vases referred to she is figured in a way which closely resembles this statue. (Fig. 124.) The motive would be that she is startled at the extraordinary birth, and flies from the scene. This figure on the vase, like that of the pediment, is youthful. Dr Murray, who proposed this identification, withdrew it

later, but it is the one most supported by evidence. If not Ilithyia, it should, by analogy with other figures, be a Nereid, possibly a messenger to Athens.

### RESTORATIONS.

It is by minute observations on the separate figures, made with the object of discovering their gestures, accessories, and character when they were complete, and also by comparison of them with other works which deal with similar subjects, or seem to derive in some degree from the sculptures, that we can most fully enter into their meaning. This is the method of "restora-

tion" which has been used so suggestively by many foreign experts. For this purpose we want the fullest possible apparatus of casts, copies, and photographs of works which are at all germane, ready to hand. The excellent British Museum Guide to the Marbles, which is frequently brought up to date is quite perfect for a work of so small a compass; but the Parthenon room itself, which at present is a little empty, might be made the best possible centre for Phidian research. Even the observations which have been made are not fully scheduled, and theories of interpretation blow here and there, under the impulse of taste and eloquence, often unrestrained by facts discovered a century or more ago by Visconti, Leake, and others.

I. The Helios and Selene of the east pediment seem to have inspired a vase painting, on which, however, the entire chariots, figures, and horses are shown,\* and not merely segments of them. The idea this painting gives of the action of the groups, and the accessories such as reins, is most life-giving. On the back of the statue of Selene is part of a scarf which evidently passed over her shoulders and helped to support her extended arms; a point of technical design which will again be referred to.

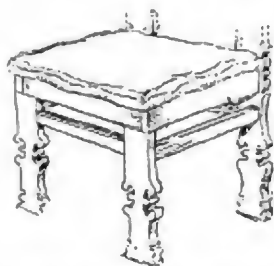


Fig. 126.—Seat of Cnidus Demeter.

II. Dionysos ("Theseus") is the only figure which still retains its head. There is a roughly cut indentation across the back of it above the neck, which Dr Murray thought indicated plaited hair; but to me it rather suggests that a metal wreath had been adjusted there. The modelling of the forearm shows that the hand was turned inwards toward the shoulder and probably held the shaft of a spear or thyrsus. A pin-hole above the ankle suggests that the feet were shod with bronze. The figure reclines on the skin of a panther or lion.†

\* Figured in *Revue Archéol.*, 1903, p. 373, and Sauer's "Theseum."

† Do the flaps at the side of the jaw (Fig. 103) indicate a lion's skin? If so, this should be a panther.

III. The Demeter and Persephone are, except for their heads, almost complete. They were in much the same state as at present when Carrey drew them. A learned German has claimed that they sit on closed boxes. But on comparing their seats with that on which the Demeter of Cnidus rests, and with others, represented on reliefs, it seems possible that these seats were meant for stools framed with uprights and rails of wood. The moulding at the back, C, might not be a hinge, but, as the top of the stool was not allowed to project at the back, a bead covering the flush joint was attached. (Figs. 125 and 126; A is from the marble, B is a suggested interpretation.)



Fig. 127. — Section of Drapery over Leg of Demeter.

I do not feel certain of this, however, as it must be allowed the seats are very like the chests which appear on vases. In any case, they would have been commonly used as seats, and need have no special significance.\*

IV. The figure usually called Iris (Ilithyia?) may be completely restored as to its general lines. As it stands, it at first seems the least interesting figure of the pediment, but close study reveals extraordinary beauties in the design and adjustments of the figure. Against the back is a slab-like area of what was clearly a mantle flying free from the figure. It is very skilfully supported by a fluttering portion of the upper tunic, which projects between the body and the mantle.

The extremities were obviously supported by the extended arms. What makes this certain is the similar design of several figures from the Nereid monument from Xanthus, where the fundamental idea is the same, and which *must* derive, directly or indirectly, from the "Iris," of which they are but copies with differences. (Figs. 120, 128.)

V. The Fates, when Carrey's drawing was made, had heads on the first and third figures.† The first looked back toward the

\* Cf. the tomb furniture, *Ephemeris*, 1899, plate 11.

† These had probably disappeared by 1750, as Pococke speaks of the right-hand group as "only three broken figures."

centre, the third forward to the Selene. A small point of restoration can be made out with certainty in regard to the middle figure. Working from the marbles, I observed that over the right shoulder there is a tiny remnant of the *under* side of a piece of the mantle which rose above it. This could only mean that it was supported by the right hand bent over near the shoulder. From the indications the accompanying restoration was made (Fig. 129), and afterwards, turning to the Museum Catalogue, I found the following: "The right arm, according to Carrey's drawing, was bent towards the right shoulder, as if the action had been that of drawing up the edge of the mantle from behind the shoulder with the right hand." It may be, of course, that the slight indication of the *under* side of the mantle has been observed before, but in any case the after-confirmation of Carrey's sketch forms good proof. On the left shoulder the mantle passes under the reclining head of the third figure; it falls down the back, and is gathered in big folds across the right thigh and over the lap.

After I had made my restoration, I found a parallel treatment of this action, and that an interesting one. A statue in the Louvre, which has been identified by Furtwängler as a copy of the Venus in the Gardens, by Alkamenes, the pupil of Phidias, follows it so closely that the derivation must be direct.\* In some respects it appears as if one of the Fates had risen erect. Of



Fig. 128.—E. Pediment: Restoration of Figure (Ilithyia?).

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\* See Fig. 129. The Louvre Venus is distinctly of Phidian type; one characteristic detail is the fluted selvage to the garment which appears on the pediment sculptures and on the frieze. Reinach assigns it to Kallimachos.

this Venus Collignon remarks that the drapery slipping from the shoulder recalls that of another one of the Fates, and the lifting of the corner of the mantle resembles the gesture of Hera on the frieze; the head, "calm and dreaming," above all reminds one of the beautiful Laborde head, which is certainly a work of Phidias. The head (Collignon, figs. 57 and 58) is indeed so like the Phidian type that the suggestion may be made that it, too, is taken over from the statue which inspired the gesture. The origin of this movement technically is to be found in



Fig. 129.—E. Pediment: Action of One of the Fates.

constructive necessity. The drapery forms a stay to the otherwise free arm, turning what would be  $\angle$  into  $\angle$ .

Similar drapery was made use of for support frequently in the pediment figures. The sleeve of the reclining Fate falls against the body far enough to give the otherwise free left arm great support.\* The flying mantle of the "Iris" sustains the extended arms. In the "Ilissos" of the west pediment the drapery which falls detached from the arm forms really a supporting slab. The scarf which

appears over the left arm of the "Victory," in Carrey's sketch, was attached to the body at the back, and must have passed on to support the other free arm. Other unidentified fragments in the Museum indicate how large a use was made of these webs of marble, detached for the greater part from the body. Fig. 130 suggests a part completion of one of these.†

A small statuette of Aphrodite, at Berlin, which Furtwängler

\* The forearm was evidently extended and the hand caught at the end of the mantle, which was held above the left thigh in a bunch. The same action as the Ilissos.

† The further arm of this figure might be an arm with drapery over it in the Museum, No. 331.



also assigns to Phidias ("Masterpieces," fig. 27), shows a wonderfully perfect and powerful use of the connecting drapery. This, indeed, forms part of the proper constructive tradition for statues by competent stone-cutters. Great confusion has been introduced into the technique of modern sculpture by following Roman copies in marble of bronze originals. To this cause we may attribute many fragile and uncomfortable jutting forms, from which it requires the insight of an Alfred Stevens to abstain.

In drawing a restoration of the last two goddesses from the eastern frieze, I have observed so many points of resemblance to the two Fates furthest to the right, that I cannot but conclude that the frieze figures are adapted from the great statues. The chief distinction is that one of the latter reclines much more to fill the angle of the gable. This, the right hand figure, rests



Fig. 130.—Restoration of 339.7 Fragment.



Fig. 131. — Two of Selene's Horses: from Indications on the Pediment.

with her right arm on the lap of the next figure, in the frieze as in the pediment. The left arm in each was extended horizontally; with the sleeve falling against the body; the drapery was caught up around the right thigh and turned into the lap; beneath the figure it falls like a valence. In both, the feet were crossed over one another. The second figure in each had its right hand raised against the shoulder, and again the mantle is drawn over the right thigh into the lap. If this is so, it follows, of course, that the frieze was done later than the pediment.

The action of the right arm of the first of the three statues is shown by Carrey. Altogether a practically complete restored drawing of this group could be made. Between the first and second figures there is at the back room cut away for some object.

VI. An interesting and valuable addition to the Athena of the west gable has recently been fitted into its place. This is the

neck and the back of the head, including a complete ear, and sufficient of the helmet to indicate its general character, and it may be completed from the helmet on the head of an Athena at Dresden, which Furtwängler has already singled out as of Phidian type. It had a volute above the ear, and was in fact the distinctive Attic helmet. It is singular, however, in having no neck-piece, but some holes in the neck suggest that this may have been applied in bronze. On the right of Fig. 132 is

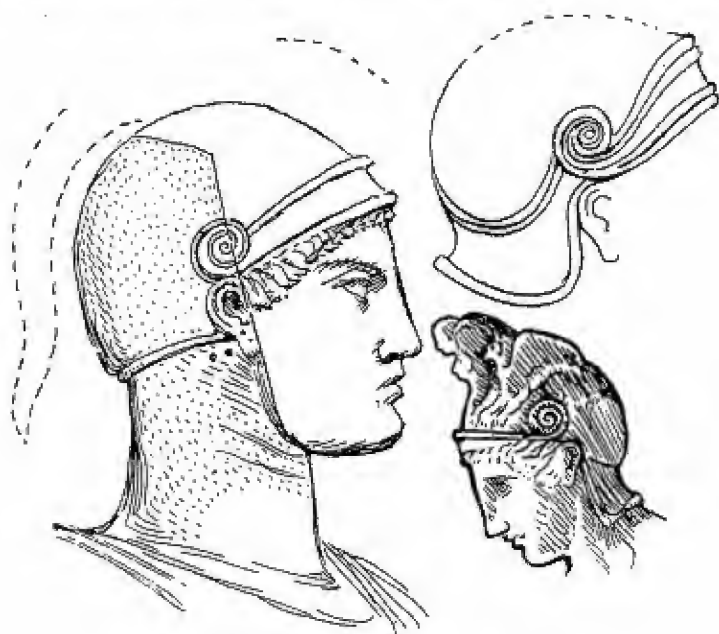


Fig. 132.—Athena's Helmet: Restoration.

the Dresden head, and above a helmet by Scopas. In the Bronze Room there is an original helmet of this type from Vulci.

The head, as restored from these indications, has much in common with the colossal head, No. 1,572, of late work in the Museum, which is admitted to be a copy of an earlier one.

VII. The rearing horses of Poseidon, the heads of which have recently been identified, approach him so closely that

there can hardly be a doubt that Cockerell was right in making him grasp at their bridles. The Kertsch vase shows the same motive in representing the scene. At the back of the shoulders of the marble fragment of Poseidon in the British Museum, there is a curious rough patch. Can a small flying mantle have been attached, like that shown on the vase?

VIII. Turning to the figure on the extreme left, the "Ilissos," we can see from a portion of the drapery above the knee that the right arm was outstretched and grasped it at this point. And this is confirmed by the early drawings made when a part of the forearm remained. The head must have been turned over the left shoulder, regarding the action at the centre—and this is shown by the corresponding figure on the right of the pediment, which retained its head when Carrey made his drawing. (Fig. 133.)

IX. The next two figures are now usually called Cecrops and his wife or daughter, although I know of no proof which has yet been offered, which necessitates the abandonment of Brunn's "animated map" idea,



Fig. 133.—W. Pediment : Restoration of First Figure.

which Dr Waldstein supported so lately as 1885. Both seem to have been seated, but she with a startled action rises to her knees, throwing a magnificent matronly arm, weighty yet soft, over his shoulders. He also draws his legs back to rise. It is always said that by his side is a serpent. Thus, in the catalogue we read: "On the ground between the pair is a convex mass, which has been recognised to be part of the coil of a large serpent. The association of the serpent with the male figure led Michaelis to recognise in him Asclepios. The relation, however, of a serpent to the kneeling figure, rather suggests the type of the earth-born Cecrops."\* And Furtwängler says, "Cecrops, the snake-man, was properly conceived as ending

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\* In the new Guide, 1908, the question is still open: "If we adopt this attribution . . . If B and C are Cecrops and one of his daughters," &c.

below in the form of a snake, but here Phidias represented him merely resting on his snake."

Not so; the figure is here undoubtedly a snake-man. The strong coil continues from the spine, twists under the body, and makes two turns. The hand of the figure rests near the tip of the tail, and behind his hand is a tenon-hole where the end of the tail must have been attached in a separate piece. Comparing my sketch (Fig. 134) with the figure taken from a vase given with it (Fig. 135), there can be no doubt of the intention. Phidias gave his Cecrops legs, and made the tail less grotesquely obtrusive; but he is a snake-man, and this raises the identifica-

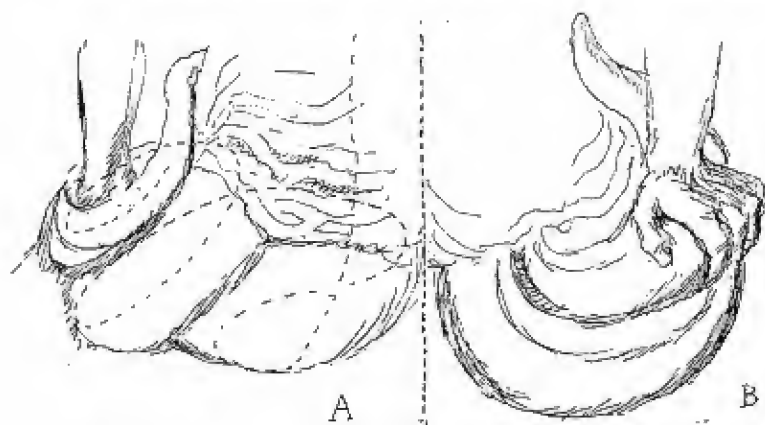


Fig. 134.—W. Pediment: Cecrop's Tail; A, back; B, from front.

tion from good conjecture to proof. Notice that his drapery, which is rather full in front, does not pass *under* the body. It falls, like a skirt, over the beginning of the tail. The figure on the Kertsch vase, which is later, has lost his tail entirely. Here he holds a wand or sceptre in his raised hand, as the sculptured figure would also have done. (Fig. 136.)

X. The female figure at the side of Cecrops in the pediment which I shall call his wife,\* is also somewhat inadequately

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\* From her mature character—because she wore some sort of diadem, it is said, and because the third daughter might have been in the gap to the left of Cecrops. See also Miss Harrison.

described—"She wears a long chiton, and over it an apoxygma, which has slipped from the left shoulder." In fact, she is dressed in a girdled chiton, open on the left side down to the girdle, so that the left shoulder and breast were nude, except for a piece of the drapery which passed over the shoulder, but entirely undercut and relieved from the body. (Fig. 137.) The opening of the garment under the left arm is extended so to uncover the side, and the edges are turned over as if it were violently blown aside by a wind, and that this is the thought is proved by a similar detail in the wind-blown garments of one of the Xanthus Nereids, although even there the tunic is not blown clear of the surface of the body. Over the right thigh a piece of a mantle appears in front; this must at the back have passed to the left shoulder and then have formed a support to the extended left arm, like the drapery of the Demeter(?) of the east gable is treated. See Fig. 138; B is the mantle below, C and D show its completion above, restored.



Fig. 135.—Cecrops: from a Vase.



Fig. 136.—Cecrops and Wife: Restoration.

The heads of Cecrops and his wife remained intact until about a century ago. The group was drawn beautifully by Pars in 1765, and a reproduction of his drawing hangs on the wall. It might be enlarged photographically, and be made the basis of a careful restored drawing. Probably if some of the educational bodies were approached they would give the help of trained students for

such a purpose. If we do not attempt such work ourselves, again it will be done for us.

About 1802 the "head of the Sabina [the name at the moment of the woman's figure] being very mutilated and having fallen [with help I expect] was brought to Fauvel. On it one

could see the holes by which a crown [?] had been fixed. The male head still remains."\* The head of Cecrops was taken down about 1803. Dodwell says that the head, "which is *said* to have been knocked off by a *Turk*, is in my possession. I received it four years afterwards." These heads in the possession of scholars only a hundred years ago have completely disappeared. When Carrey made his drawings fourteen figures



Fig. 137.—Cecrop's Wife:  
Wind-blown Garment.

retained their heads, now there is only one with a head. In Paris there is a noble female head which almost certainly came from the Parthenon. A cast of this is shown at the Museum, and casts of two other imperfect heads are in the cellars. Of one of these I give a sketch (Fig. 139), it may be compared with a fine head at Oxford and a head called "Sappho" at the British Museum, both of Phidian type.†

XI. Turning to the figure on the extreme right, which has been terribly injured since Carrey made his drawing, we can, by a careful consideration of the drapery, arrive at a few suggestions as to the complete figure.

A mantle which covers the whole back was brought to the front over the knees and lower legs; while at the other end it must have been wrapped round the right arm, on which the figure

\* "Antiq. Athens," iv. p. 22.

† The Oxford head, Reinach says, is of his time, and must have been executed under his influence. Much remains to be worked out in regard to these heads. We need full-sized photos of all the heads of the frieze, &c., as a beginning.

rests. The indications suggest that the left shoulder and side were bare. The figure on the left of the Kertsch vase recalls this one, and I suggest that it derives from it. There the upper part of the body is wholly uncovered. Carrey's sketch is inconclusive as to the pediment figure, and a rough note of Gell's is against the uncovering of the side. (Fig. 141.)



Fig. 138.—Cecrop's Wife: Restoration;  
B, C, D, Mantle; A, Serpent's Tail.

XII. As before said, the so-called "Victory," for long assigned to the east front, now takes its place just in advance of Poseidon's charioteer. It was a winged figure, as is shown by the strong mortice holes in the shoulders, and it is best called Iris.

This figure shows in a high degree a characteristic which is shared by other figures of this pediment. A gust of wind seems to sweep through the composition from the centre of action.

This is, of course, obvious in regard to the drapery of the "Victory," which is driven forcibly against the body and flies out behind. It might be supposed, however, that this figure was in flight, but the effect of the wind is almost as apparent on the



Fig. 139.—Sketch of Cast of Head.



Fig. 140.—Metope : Head ;  
from a Cast.

robes of Poseidon's charioteer, or even more apparent in Carrey's drawing, where the skirt of the chiton is blown out behind so to uncover the leg. So also was it with Athena's charioteer. Are



Fig. 141.—W. Gable : Restoration of  
Last Figure.

these also to be thought of as in motion, although their horses are halted and rearing? Were the chariots still coming up while the action took place, or had not the gods themselves come in them? Furtwängler has already noticed that the garments of the next

figure to the chariot on the right, who is *seated*, are agitated by the wind. "The drapery appears in the most striking manner seized by the wind, which troubles its folds." Far away on the left the tunic of the wife of Cecrops is wind-driven almost as much as that of the Victory, and is blown away from her



shoulder. Even the mantle of the reclining Ilissus seems to flap against his arm, but perhaps this requires "good will" to see. Putting all these indications together, it would seem that Poseidon's stroke was accompanied by a great blast from the sea, which this front faces, the effects of which carried the action over the whole composition.

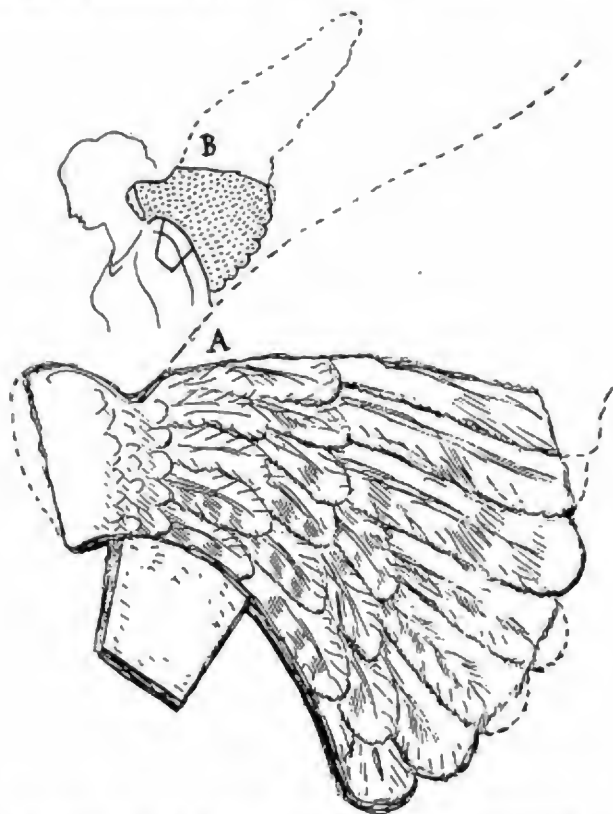


Fig. 142.—Part of a Wing : and Suggested Restoration, B.

At the Museum there are several casts of fragments of wings, and I have tried whether I could gain any light as to their form. One is quite large, and retains the tenon by which it was attached to its figure. It is part of an expanded left wing. (Fig. 142.) As other fragments are also from another left wing, and as the large fragment is said not to fit on to the "Victory," it is clear that there

were at least two winged figures. The large fragment is the expanded part of the wing which was nearest the shoulder attachment, and the completed form must have been somewhat as in B. The portion which clasps over the collar bone has a parallel in the Victory of Olympia, and the wings of Greek figures generally spring from the collar bones. The form of the wing demands considerable extension backwards, and if the figure to which it was attached was in the pediment it could only have been placed in profile; but it is possible that it belonged to an acroterion.

Several writers, among whom are Miss Harrison and Dr Cecil Smith, have suggested that there were Victories in the centres of the fields of both pediments between Zeus and Athena, and Athena and Poseidon. In the latter case, at least, judging from Carrey's drawing, there would surely have hardly been

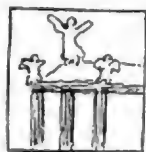


Fig. 143.  
Acroteria:  
from Vase.

room for this. Is it not probable that the desired Victories were on the acroteria of the pediments as at Olympia, Epidaurus, and other places? Bohn so restored the summits of the fronts, setting scroll-work, of which some remnants have been found, by the sides of the figure. This scroll-work, however, which is usually considered to come from the Parthenon, and certainly came from the Acropolis,\* seems to be more in the style of the fourth than of the fifth

century, as it contains acanthus foliage, which Furtwängler thought was first adopted at the Erechtheum. There is no doubt at all as to there having been acroteria of some sort on the pediments, as the bases for the lower ones still exist.

Now on the Kertsch vase, which has been so often referred to, one corner of the composition is occupied by a tiny sketch of a temple, which it is generally agreed probably stands for the Parthenon, from which the figure design was derived. (Fig. 143.) On this Victories are shown over all the angles of the pediments. The Parthenon was the temple of the victorious Athena, who had shown her power and favour in the struggle with the Persians. The Victory type, we know, was designed by Phidias to be borne

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\* Inwood thought they were parts of a Corinthian capital: were they not from the acroteria of the Erechtheum?

on the hand of the Parthenos within ; is it not probable that Victories also surmounted the temple without ? The whole composition of the west front would thus represent—in the pediment Athena taking Athens under her protection of old time ; her present help in the Persian War on the metopes ; the votive shields on the architrave ; a Victory as acroterion.

### TYPES OF ATHENA.

The colossal statue of the interior must have been amazing in its glorious beauty, and yet severely restrained dignity. "The sweet white of the face and naked arms, set in the gold of hair and peplos, formed a vision of supernatural splendour."\* It stood, with its pedestal, nearly 40 feet high ; several copies, though for the most part small and late, agree so closely together that the main facts are certainly known. The finest is now at Berlin ; it was found at Pergamos, is about 10 feet high, and dates probably from the second century B.C. At Berlin is also a coloured copy of the head. The goddess stood erect, gazing along the axis of the temple to the eastern door and the sky beyond. Her left leg was slightly bent, giving delightful diversity to the folds of her long peplos. Her extended right hand supported a winged Victory ; the left held her round shield edge-ways and resting on the ground. On her breast was the ægis, and her towering helmet was magnificently crested with sphinx and horses.†



Fig. 144.  
Athena.

\* Lechat.

† Some coins show a chariot and horses conducted by a Nike on each side. Other representations show projecting horses along the front. These are possibly the sources of the horses on some ornamental vases of the third century from Southern Italy ; and proceeding from this it seems likely that there are many echoes of the Parthenos on these vases. Some have fine heads of Athena with a Nike above, others have a Gorgon's head encircled by winged snakes set in front. The design of this is so fine that we may suppose the head on Athena's shield or ægis was of this type. One vase in the Museum besides the horses has Hippocamps painted on the sides, and the rest of the body is covered with an interesting scale pattern, which last with the Gorgon may recall the pattern of Athena's ægis.



Fig. 145.—E. Frieze : Head of Athena ; restored by comparison with "Lemnian Athena."

Tresses of hair fell on her shoulders and back. The "Maidens" of the Erechtheum are practically copied from this figure; there is the same axial pose and fall of the drapery, and the same bare arms, long dresses, and sandalled feet. The chief difference is in a new fashion of girding the peplos.

It has been argued whether the pillar beneath the Victory-carrying hand of the goddess can be original. Miss Harrison says: "The pillar must be thought away. It is inconceivable that Phidias should have introduced this clumsy, obtrusive support . . . quite unthinkable." Drs Murray and Waldstein agree. May I suggest that this, even on æsthetic grounds, may be too hasty a decision? This column is not necessarily a makeshift post, such as is seen in some later statues, but it may be thought of as part of the ideal composition. If Athena indeed had stood there, bearing a Victory 6 feet high on her extended hand, would *she* not have been glad to rest her arm on a convenient support? I declare that when I think it away, as I am told, I get quite tired with feeling the strain. We may suppose, too, that the pillar was the proper pedestal of the Victory, and that "when we were not looking" Athena replaced it there. The evidence for the column is surely quite conclusive. It appears copied on the statuette, on a

relief now at Berlin, and on some coins of Athens. Finally, the arm itself is not in a position of balance, and were it not for the pillar the Victory would be held much higher. The shield, which must have been full 10 feet in diameter, was adorned with reliefs of the battle with the Amazons, the design of which is best known from a small late copy in the British Museum. The spear probably rested against the left shoulder, as shown on a relief at the British Museum (Fig. 144), and on a medallion in the Hermitage. Murray, following a gem,



Fig. 146.—Athena :  
from Bronze Cista.

says she held it in her left hand, which also supported the shield. The gem in question seems to me to be only a copy of a coin of Athens, where the spear is given this position for sake of clear definition. From the British Museum relief, which might with advantage be brought into the circle of Phidian material in the Parthenon room, and several others of the same class in which the goddess is shown conferring a wreath on some person, we may infer that the Victory-bearing Athena was conceived of as Giver of Victory to the Athenians. On the Berlin relief it is the Victory she holds which crowns a man.\* The glowing gold of the garments and of her hair, which were doubtless of wrought goldsmith's work in tresses, the tinted ivory of her flesh, and her jewelled eyes, must not be thought as merely costly and splendid, they were that, but the gold had radiance, the ivory was flesh-like, the eyes actually flashed.

Furtwängler, by an almost clairvoyant exercise of critical insight, sought in his "Masterpieces of Greek Sculpture" to gather out from later copies those which derived from originals by Phidias. One of these, a figure at Dresden, he identified with the Lemnian Athena, a much-praised early work of the master's, which also occupied a place on the Acropolis. His reconstruction of the Lemnia is now widely accepted, although some writers are still unsatisfied, and one of the latest—Pottier—urges that the type of head is unlike any known work by Phidias. A close examination, however, of the seated Athena of the east frieze, has convinced me that in the design of the head and bust, and in general "feeling," this figure might be called a translation into relief of the statue which, Furtwängler claims, represents the Lemnian Athena. He remarks of the statue that it typified the Athena of Peace as a slim, young girl, almost boyish. The striking characteristics of the head were, the absence of the helmet, and "the short hair combed up at the back . . . wavy and curly, and tied with a fillet." This describes the head on the frieze perfectly, the outline of which, although the surface is badly injured, can be surely traced.

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\* The Parthenon was the true Temple of Victory, and why another specifically called that was built on the Acropolis is puzzling. Was it a symbol of the reaction?

Some of the modelling, like the position of the ear, is still also indicated. She is Athena with her own people, and on her own rock; so exquisitely fresh and bright, that only Ruskin could have described her in his "Queen of the Air," had he known her. "She is the queen of maidenhood, stainless as the air of heaven." Helmet and ægis are put away, and she holds a spear only as a plaything. The whole figure is a seated version of the same ideal type as the Lemnian Athena. The head, neck, and the fall of the drapery over the slight, shapely shoulder, may be described as identical. In my Fig. 145, I have filled up an outline of the head taken from the frieze, with the details from the statue, and how narrow is the margin for doubt may be seen by comparing it with the photograph of what I suppose to be a modern Italian restoration, from the indications of the frieze alone, published from a terra-cotta by Dr Waldstein.

Of the "Promachos" there is no large copy which can be identified with certainty, although there are dozens of figures on vases, and small bronzes which, doubtless, owe their inspiration to it.

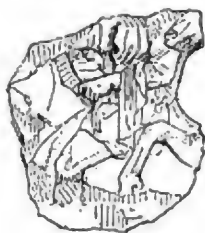
There is on a bronze cista from South Italy, in the British Museum, decorated with magnificent Greek incised drawings of what appears to be a grotesque portrayal of an assemblage of the gods on the Acropolis, a figure representing a great external statue of Athena, which, I think, may be inspired by the great external Athena of the Acropolis. It is clearly of Phidian type, with the same Attic helmet as the Athena of the west gable, and with head sharply turned over the right shoulder, as hers was.\* Her leg is bent in an attitude of rest, and her shield rests on the ground—a detail which seems desirable constructively in a colossal statue. (Fig. 146.) The small bronze No. 1035 with glittering diamond eyes also probably derives from one of the Athenas of Phidias.

The Parthenon marbles form a great treasure which is well cared for, and well understood by a narrow circle of experts, but we miss much by there being so little active curiosity about

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\* I have just seen at Lyons another cista, also from Præneste, with a somewhat similar subject, and apparently by the same artist.

them. Perhaps the possibility of improvement might be considered in respect to the lighting and the accessibility of some select panels. The fragment of frieze at Paris seems to be of exceptional value from its place and lighting, but it is really not so. Its top is only about six feet from the floor, and every inch can be minutely examined. Could not a few pieces, including some of the metopes, be brought down on screens and their places be taken by casts? The metopes, where they are, are largely out of sight, and might as well be plasters. Although, in the reports on the acquisition of the marbles, much was said as to their educational value, insufficient use is made of them. "Restoring" a figure from the Parthenon should be an incident in every sculptor's training; if it were, we should soon know more about them and more about sculpture. Young architects should also measure and "restore" the building fragments. Finally an attempt should be made to collect all material relating to the school of Phidias.





GREEK BUILDINGS  
REPRESENTED BY FRAGMENTS  
IN THE BRITISH MUSEUM  
BY W. R. LETHABY

IV.

THE THESEUM, THE ERECHTHEUM,  
AND OTHER WORKS

LONDON  
B. T. BATSFORD, 94 HIGH HOLBORN

1908



## NOTE.

As this is the Fourth of the Series of Monographs on GREEK BUILDINGS, the pagination is continued from the third, for convenience of reference when the complete Series is bound.



ago. This frieze has many points of resemblance to that of the Parthenon, and to its metopes. The central group was again an assembly of gods watching a battle—a subject found also at the temple of Nike, and earlier at Delphi. The building throughout, although much smaller,\* recalls in its details the Parthenon to such a degree that the question of priority is of some historical importance. It is almost as “harmonious in its proportions, and as refined and perfect in its construction.” † The inclination of

## IV. THE THESEUM, THE ERECHTHEUM, AND OTHER WORKS.

*"The Greeks were the first people that were born into complete humanity. The nations before them had been, and all around them still were, partly savage. But the power of a new spirit came upon the Greeks, and the stones were filled with breath."*—RUSKIN.

### THE "THESEUM," OR TEMPLE OF HEPHAISTOS.

OF the Theseum the only actual fragments in the Museum are those belonging to the ceiling of the peristyle. One is a thick marble slab pierced with six holes 7 inches square, as much being left between; the others are little covering panels which fitted into rebates on the upper side, being very thin and light. There are also valuable casts of the frieze taken a hundred years ago. This frieze has many points of resemblance to that of the Parthenon, and to its metopes. The central group was again an assembly of gods watching a battle—a subject found also at the temple of Nike, and earlier at Delphi. The building throughout, although much smaller,\* recalls in its details the Parthenon to such a degree that the question of priority is of some historical importance. It is almost as "harmonious in its proportions, and as refined and perfect in its construction."† The inclination of its columns is exactly similar, their entasis is more delicate, and even the inclined lines of the pediment are said to have a slight vertical curvature. With all the many points of likeness to the Parthenon, there are also differences which bring it into relation with other Doric buildings.

Though the date of the Parthenon is accurately known, its place in the sequence of development is hardly yet established.

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\* Its size may best be remembered as  $c.100 \times 40$  feet to the centre lines of the columns, and 30 feet from the platform to the top of the pediment.

† Penrose.

A few years ago it was always assumed that the Theseum predated the Parthenon, but Dr Dörpfeld has shown good reason for supposing that it followed it. On comparing the friezes around the cellæ he observed that at the Parthenon regulæ and guttæ are placed at intervals beneath the sculptured procession as they would be beneath a triglyph frieze. The architect of the Theseum, however, has omitted them. At Sunium not only are the guttæ absent, but the columns are all equally spaced. He therefore puts the buildings in the following order:—The Parthenon, the Theseum, the temple at Sunium.

In regard to this, I do not think that it has been noticed that the temple of Rhamnus, exhaustively illustrated by the



Fig. 147.—Theseum, East Front.

Dilettanti Society, is so like the Theseum that one must be a copy of the other,\* and this in points so minute that the likeness cannot be a mere coincidence. Now, the cult statue of Rhamnus, of which there are fragments at the British Museum, was the work of a pupil of Phidias, and there cannot be a doubt

that this temple is later than the Parthenon. The Theseum is remarkable for a difference between the roofing of the portico and the posticum. The frieze over the inner columns of the former runs on right and left of the antæ until it joins the main order, while in the latter the frieze returns. At Rhamnus this arrangement is repeated, and the disposition of the transverse ceiling beams and lacunaria are almost identical in both temples. The cymatium of the pediment at Rhamnus was continued along the flanks as a gutter, but at the Parthenon there was no gutter. It is interesting to recall that Penrose found a fragment of a gutter at the Theseum which he concluded came from the flanks of that temple. In one respect, at least, Rhamnus is intermediate

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\* Uned. "Antiq. of Attica."

between the Parthenon and the Theseum, as its inner plain friezes have blocks and guttæ at intervals. The drums of its columns were connected by wooden blocks and pins like the columns of the Parthenon, and the painted decoration was similar. The painting at the Theseum was described a century ago by Dodwell: "Some elegant painted foliage and a meander resembling that of the Parthenon are remarked on the interior cornice. The lacunaria are adorned with square compartments, on each of which is painted a radiated ornament or a star." His full and clear account of the painting on the sculptures has been quoted on p. 89. It is fully corroborated by what Leake saw about twenty years later. "All the sculptures of the Theseum, both those of the metopes and of the friezes of the vestibules, preserve the remains of the colours with which they were painted. Vestiges of bronze and golden-coloured arms, of a blue sky [background], and of blue, green, and red drapery are very apparent. The custom was brought from Egypt, that country to which the Greeks were indebted for so large a share of their architecture and other arts." Many writers have observed that the ornamental painting was outlined by a scratched line. Chandler says that

at the Theseum "Mr Pars found out the method used in drawing the echinus or eggs and anchors from the marks of the compasses on the walls." This note seems to embody a slight mistake, for in one of Stuart's plates of the temple the construction of a painted *bead decoration* is shown by circles drawn by compasses. It is probable that the ornament generally was outlined by means of a "templet." The elegant painted scrolls and palmettes of the Theseum are much more elaborate than the patterns at the Parthenon, and this again speaks of later date.

For all that concerns the sculptures and other details see the monograph of Bruno Sauer (1899), who restores even the pedimental composition from the slight indications in the fabric

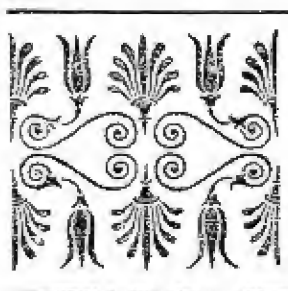


Fig. 148.—Painted Decoration.



of which those to the west were first pointed out by Penrose. Of the six watching gods in the frieze those on the right cannot be identified with certainty. The one on the extreme right Sauer restores as Hephaistos. Those on the left all agree are Athena, Hera, and Zeus; the Athena he restores as holding her helmet (see above, p. 113). This is a very noble group, the gestures inspired by the Parthenon figures, but the drapery is more voluminous and later in style. In the Elgin Collection there are good drawings of this frieze, and from them I have sketched the Athena and Hera. (Fig. 149.) Athena wore a girded chiton with a deep turn-over—this is a characteristic of Athens fashions *c.*



Fig. 149.—Sketch of Athena and Hera from the Frieze: *cf.* Fig. 75.

430-420. Her right arm falling by her side evidently held her spear as at the Parthenon. Hera is enveloped by a large mantle over the chiton; it is drawn over the head, covers the left arm and hand, and falls on the lap over the rest of the garment which is brought from the back over the right thigh. This would be a magnificent subject for a restoration essay.

The metopes are also very fine. The Museum possesses the original drawings of these made by Pars *c.* 1765. The designs seem to be copied on a vase in the Museum, and on another at Madrid (see Miss Harrison's "Athens," p. cxv.). Altogether the architecture, painting, and sculpture agree in dating the work,

c. 430-420. Now a record has been found that a cult statue of Hephaistos was set up in 421 B.C., and this date agrees perfectly with the time when we may suppose the "Theseum" was dedicated.

I have called it by its traditional name, but it has been shown by Dörpfeld, whose arguments have been summarised by Miss Harrison, that it was most probably the temple of Hephaistos. Wordsworth came very near to the same conclusion seventy years ago, and the points he mentions give additional proof.

At that time, when it stood on the outskirts of the city with ploughed fields close by, and when "the ruins were the least ruinous buildings in Athens," it must have been wonderfully impressive. "Such is the integrity of its structure that it requires no description. Its beauty defies all. The loveliness of its colouring is such, from the rich hue which the marble has assumed, that it looks as if it had been quarried from the golden light of an Athenian sunset."

The beauty of these marble pillared Greek buildings when the shafts reflect the setting sun is almost surpassed by the mid-day glory when the sky, brighter than the glass of Chartres and Bourges, seems to be set in between the columns of the peristyle. More even than others this was an architecture to be completed by broad flooding light, delicately modelled shades, trenchant sharp-edged shadows, and points of gold and colour. Whatever were the origins of triglyphs, mutules, and guttæ, their development and persistence may be understood when they are seen in sunlight and shadow, the deep shadow of the cornice overhanging like a pent roof, the alternate lights and darks of the triglyphs, and the long fingers of shadows from the guttæ.

#### THE PROPYLÆA.

The Acropolis is entered through five gates, sheltered under a building having Doric porticoes and interior rows of Ionic columns. (Fig. 150.) This middle building is flanked by wings on either side, thrown forward and rising above strong basement walls, which continue to form bastions, on one of which stands the little temple of Nike Apteros. After the Parthenon the Propylæa formed the most famous structure in Athens. It was part of the

work of Pericles, and the lower works may even have been built before the Parthenon was begun.\*

It was, of course, a fortified entrance into a citadel, and the wings flanked the steeply ascending road to the gates. In the wings, approached from within, were picture galleries and other halls, some of which were never completed. Stuart inferred part of the original intention and restored the south wing on his plan, but the entire scheme has been much more fully worked out by Dörpfeld, and a good summary of his results, with a plan, is given in Miss Harrison's "Athens."†

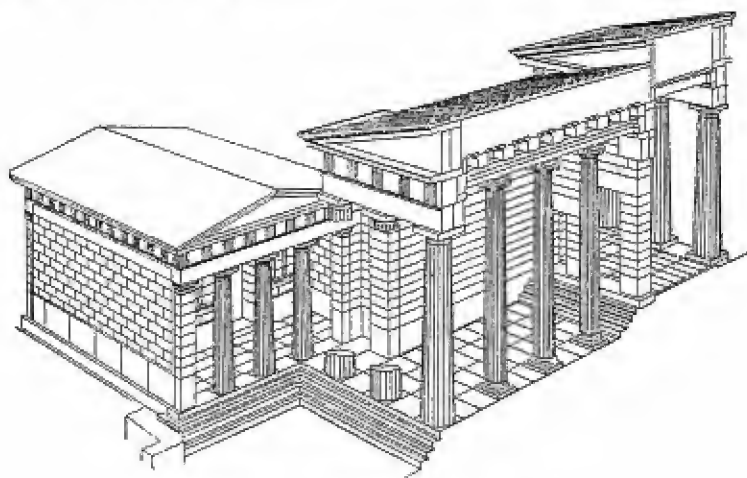


Fig. 150.—The Propylaea : Perspective Section.

We have in the Museum one of the Doric capitals, a drum of one of the Ionic shafts, and a length of the moulded band under the lacunaria. These stones, better than any others in the Museum, display the most characteristic points of Greek construction in marble. The bed of the drum of the column is wrought exactly like those of the Parthenon, with zones of polished and chiselled face. In the middle is a square hole about  $4 \times 4 \times 4$  which took the wooden box-dowel, and one of the actual

\* Parts of a simpler earlier gate still remain. *American J. Arch.*, 1904.

† See also *The Builder*, 22nd February 1890.

cypress dowels is preserved upstairs in the Bronze Room. It is needless to describe the procedure—the thing is before us.

In the top bed of the capital is still a metal dowel which connected the capital and the epistyle. The length of moulded band is even more instructive. We have the heading joints, polished around the margin and rough picked within, and on the top bed there are six sinkings of three different kinds. Two were for metal dowels,  $3\frac{1}{2} \times \frac{1}{2}$ . Two others at the lateral edges are of T form. They are the halves of the matrices of H-shaped cramps which linked stone to stone. Further in are two pits sunk into the bed, inclined at an angle; these were prepared for the forceps, which grasped the stone so that it might be lifted by a pulley. This same stone furnishes beautiful examples of

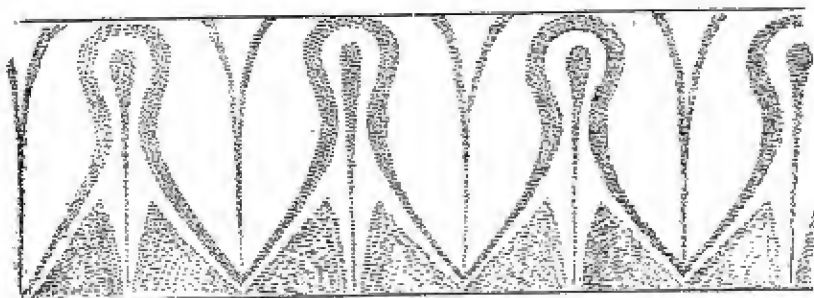


Fig. 151.—The Propylaea : Painted Decoration.

Greek moulding profiles of the best time. On one of the mouldings may be traced a leaf pattern, the shadow of the bright colour decoration which once adorned it. (Fig. 151.) Like all other Greek buildings it was fully decorated with colour. The mutules, and therefore the triglyphs, were blue; the spaces between the mutules were red, and had a rich palmette ornament in each; the cymatium had large "eggs and tongues" painted on it.

#### THE NIKE AND ILISSUS TEMPLES.

Four slabs of the frieze and an angle capital in the Museum are described as having belonged to the Nike temple.\* An

\* The wingless Victory—more properly Athena Nike. At Megara there was also a temple to Athena Nike (Pausanias).

anta capital is assigned to the little temple, now entirely destroyed, which stood by the Ilissus river, but this I shall show also belonged to the Nike building. (Fig. 152.) Both these small temples were very much alike, both had "prostyles" of four Ionic columns at each end and no columns along the sides. The temple

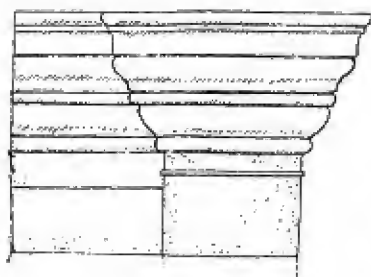


Fig. 152.—Nike Temple:  
Anta Capital in the British Museum.

of Nike, although smaller, was richer than the other. Its sculptured frieze is clearly of later date than the Parthenon, and may hardly be dated before 430. On the other hand, an inscription of about the year 450—which was found in 1897—orders that a temple to Athena Nike should be built by the architect Callicrates. It would appear that it and the Propylæa were begun or con-

templated with the earliest of the new works on the Acropolis, and that they were then delayed so that the Parthenon might be pressed forward to completion.

Besides their general resemblance some of the details are *identical* in the two temples, and if one was designed by Callicrates we may assign the other to him also. One little point at the Ilissus temple may be pointed to as showing that it was of the age of the Parthenon. Stuart and Revett, who give valuable illustrations of the lost building, figure a palmette ornament which was painted on its architrave; now this is identical with that of the Parthenon as engraved by an independent observer. (Fig. 69.) Again the doorway had no marble architrave, but there was a sunk band around it for a bronze-covered wood frame.\* The doorway of the Parthenon was similar, so also were the doors of the Propylæa



Fig. 153.—Ilissus Temple:  
Sketch of Capital,  
by Pars.

\* I have seen this type called the Doric, and the marble frame the Ionic, but the Ilissus temple was Ionic.

and of the temple of Bassæ. This kind of doorway may be taken as a general rule to show that a building is earlier than the Erechtheum.

The capitals of our two little temples and those of the interior order of the Propylæa are all similar, and must be practically contemporary, and this indicates a date round about 435. The Ilissus temple may be safely dated *c.* 440.

It is described by Pococke as "built of very white marble, the walls one stone thick, the fluted roll of the base was continued around the temple and inside the portico." He gives a view of the interior of the portico which shows the recessed band around the doorway, and he also shows remains of the stone ceiling of the portico, and a diagram of the entablature which indicates that the architrave was plain. In one of the views engraved in the

"Antiquities of Athens" this temple appears in the foreground. Pars' exquisitely accurate drawing of this (1765) is in the Print Room of the Museum, and this too serves to confirm the entire accuracy of Stuart's drawings as to the form

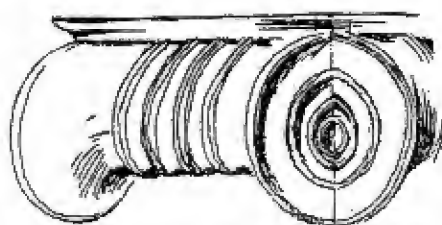


Fig. 154.—Ilissus Temple: Intersecting Volutes.

of the capitals, the plain architrave and frieze, the moulding along the wall of the cella in continuation of the antæ capitals, the base moulding and steps, and the walls with the raised surface showing that they had never been cleaned off. I give here a sketch of the capital taken from one which appears lying in the foreground of Pars' drawing, and also a sketch showing the mitring of the inner angle volutes from a figure in Stuart's text. (Figs. 153, 154.)

The capital of the Nike temple at the British Museum has only recently been identified by a German scholar. It is an angle capital. Here the inner volutes were not mitred through the centre, but they were thrown out far enough to clear the eyes. (Fig. 155.) In the external eyes of the volutes there are small holes. In the catalogue it is suggested that these are "perhaps intended

for the insertion of the cone employed to generate the curve of the volute." I shall show below that the use of such cones is most unlikely, and Inwood's suggestion that these holes were for metal fastenings to which festoons might be suspended is much more probable.

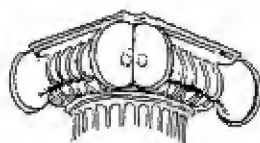


Fig. 155.—Nike Temple:  
Intersecting Volutes.

Compare what is said as to the Erechtheum on p. 169. The well-known relief of Icarus and Dionysos at the Museum shows such festoons. Notice that the egg and tongue moulding is only indicated under the volute; it is so at the Propylæa also. Inwood's drawing of this capital (plate 23) is not correct, for in modifying it into an ordinary (not angular) cap he has got into trouble with the eggs and tongues, showing 22 instead of 24. Coming now to the anta capital (fragment, No. 436), the profiles of the mouldings and their height at the two temples were so exactly alike that it would be impossible from these alone to decide to which of the two the stone belonged, and it has in fact been assigned to the wrong one by the Museum authorities. (Fig. 152.) Stuart, however, figures the width of the Ilissus antæ as 20.5, and as the lowest part of the capital projected beyond the pilaster making a "facia" this was nearly 21 inches wide. Ross gives the similar dimension at the Nike temple as .495 m. Now the width of the cap at the Museum, which is  $19\frac{1}{2}$ , agrees with the latter, and the stone consequently comes from the Nike temple. It agrees with this that the order of the Ilissus temple was about 1.6 higher than that of the other. I think I can show further that our stone was obtained with the other fragments of the Nike temple brought away by Lord Elgin. We are told that when the temple was broken up, its materials were used for building a bastion, and later, "the friezes which had been built into a wall by the Propylæa were removed by Lord Elgin." Now amongst the Stuart papers in the MSS. Room there is a careful drawing of



Fig. 156.—Winged  
Nike, South Ken-  
sington Museum.

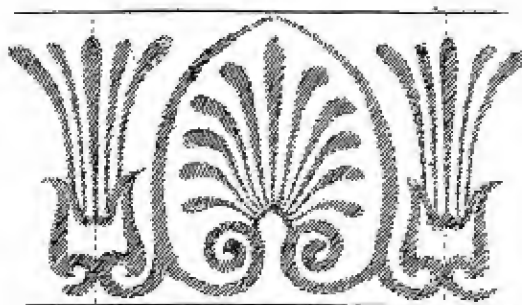


Fig. 157.—Nike Temple: Painted Decoration.

an anta capital exactly like ours and figured 19.55 wide. A note with it says "the capital of a pilaster in the wall of a bastion fronting the Propylea . . . (?) with the frieze with basso relievos. In a book with a marbled cover said to be the capital of an anta of the Temple of Victory without Wings." We thus have at the Museum the anta capital, the angle cap which stood in front of it, and lengths of the frieze. It would be easy to associate these together in their proper relation and thus make an important specimen of Greek architecture. It is evident that Lord Elgin set himself to "collect" representative details of the chief buildings of the Acropolis.

Around the platform of the Nike temple was a balustrade of sculptured slabs.

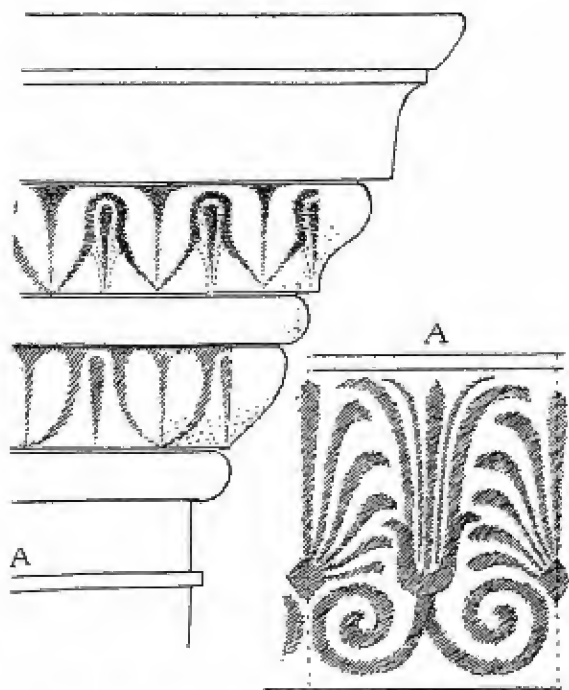


Fig. 158.—Nike Temple: Painted Decoration.



One of the figures is the well-known Victory adjusting her sandal, a cast of which is found in every art school. Amongst the few Greek rings at South Kensington is one engraved with the same subject, and probably copied from the balustrade. (Fig. 156.)

The Nike temple was as usual completed with painting, and amongst the drawings recently given to the Museum by Mr Halsey Ricardo, and made by his father in Athens about 1844, are accurate copies of the patterns on the anta capital and an ovolo moulding. This anta cap thus completed may be said to be exactly like the antæ caps of the Erechtheum, save that one was painted, the other sculptured. How far do the calyces of the anthemions, Figs. 157, 158, represent the acanthus of Fig. 166?

### THE ERECHTHEUM.

We have in the Museum specimens of almost all the characteristic details of the Erechtheum. First of all there is the best preserved of the Maidens from the "Caryatid Porch." Then one entire column from the north-east angle of the eastern portico, the anta capital which corresponded to it, and lengths of the decorated moulding in continuation of it along the wall, lengths of the main cornice and architrave, a part of a richly carved window architrave from the east portico, coffers from both porticoes, &c. There is also a cast from the console of the north door. It would be worth while to obtain casts of the few other details, such as the cymatium of this door, so that we should have a complete collection of details from this building. A few years ago there was at South Kensington a cast of the frieze sculptures affixed to a black marble backing like the original. This might be put in its place in the entablature. I was about to say that the whole angle of the building might be erected from the Museum fragments, but unless this is done with casts it banishes some details (like the capital at present) to a height where they cannot be studied. I would like indeed to suggest that the *original* capital should be brought within reach.

The Erechtheum consisted of a body or cella divided into two or three parts. (Fig. 159.) To the east was a hexastyle portico; on the north was a four-pillared portico; and opposite

to the south was the prothesis of the maidens (the Caryatid Porch). (Fig. 160.) The north portico and west wall were at a lower level than the east end and south side; this difference of level was occasioned by its being built on the brow of the Acropolis. (See the model at the Museum.) The irregularity of the plan seems to have been conditioned by various sacred sites which were to be sheltered by the building. Dörpfeld considered that this irregularity was the result of

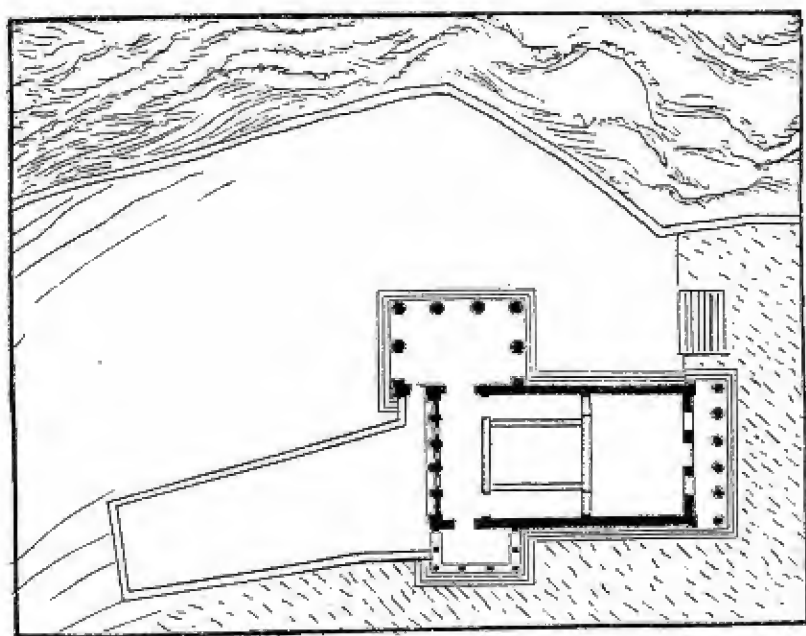


Fig. 159.—The Erechtheum: Plan showing different levels.

a change of scheme, and that the body was originally intended to be continued westward until the north porch became central. Petersen, in the most recent study of the subject, does not accept this view, and acutely observes that any irregular plan may be made symmetrical by doubling it over from some imaginary central line. I can see no reason for supposing that the building was not planned as it has come down to us, together with the west wall and its columns. As to the last, Prof.

Gardner has argued that attached columns were not in use at the time when the Erechtheum was built, but we find them in the temples at Agrigentum and at Bassæ, as well as in later works, like the Philæion at Olympia.

The late works have shown that a large scheme of repairs was carried out in early Roman days which included work not only on the west wall but to the doorway, roof, and architrave of the north porch. Penrose considered that the west wall originally had the columns but no windows. Furtwängler thought that both were original. The later columns of the west wall fell in 1852. "My attention," says Penrose, "was called to the fragments as well as to the manner in which they had been fixed to the

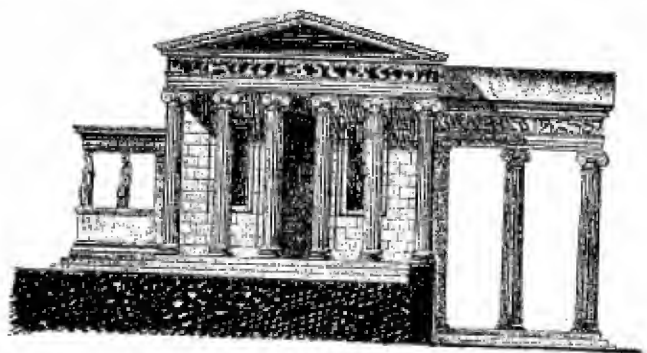


Fig. 160.—The Erechtheum, East Front.

undoubtedly genuine work they rested on, which included the string and the bases of the half columns. The workmanship of the columns and capitals and the mouldings of the windows was of a very inferior character."

It has generally been accepted that "the columns on the wall by the Pandroseion" mentioned in the accounts are the attached columns of the west front, and Choisy translates an entry in those accounts of a payment "to those who put four closures between the columns by the Pandroseion," and applies it to these columns on this wall. (Fig. 161.) It seems to confirm this view, that the windows were indeed in a thin screen wall set in between the columns. We are usually told that the west wall, with its attached columns, was blown down in 1852. But in 1839, when

a drawing by E. Flandin, now in the library at South Kensington, was made, the western wall and its windows was already destroyed, only three columns and two pieces of architrave resting upon them being left. In 1832-33 it was in this same state, as appears from the description given by Wordsworth, who says, further, that the adjoining north porch was much injured in the siege of 1827. It was almost certainly at this time that the screen wall was destroyed, leaving only the three columns standing. Eight years before, when it was drawn by Inwood, it was very much in the state it was in at the middle of the eighteenth century. (See view in Pococke's travels.) By what has been said, the construction of the wall is plainly revealed; the columns were first erected, and then the screen wall was built. Even now the antæ at each end, rebated to take the screen wall, are of the *original work*. The north anta is formed on stones which are part of the main walling blocks which show in the north porch. Since writing the above a valuable contribution to the history of the west wall has been published in the *American Journal of Archaeology* (June 1908). It is there shown by a comparison of the accounts with the building that the present west wall represents the original external wall, and that in the southern bay there was a curious recess. It is stated that the screens between the columns were of wood, this follows from the fact that Comon of Melite, who fixed them, also prepared rafters for the roof.

The tetrastyle (north) porch was greatly injured in the siege of 1827; before that time the spaces between the pillars had been walled up to form part of a house. There is a good drawing of it in this state *c.* 1802, by R. Smirke, in the library of the Institute of Architects. The fallen portions have recently been re-erected. In the Museum we have a lacunar stone and a cast of the door console, which, as said above, is not actually part of the *original*

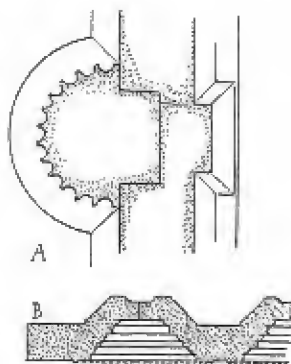


Fig. 161.—A, Plan of Attached Column; B, Section of Lacunaria.

work, although it may be a copy. An open space is left in the lacunaria, which was repeated in the roof above, so that the prints of Poseidon's trident, above which this porch was erected, should be open to the sky. These lacunaria are a remarkable instance of the paring away of all surplus stone for the sake of lightness. In the middle of each coffer is a hole, where doubt-

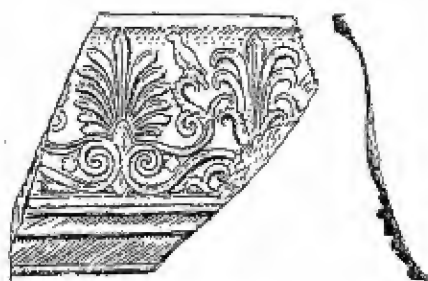


Fig. 162.—Moulding after Penrose.

less a rosette of bronze was attached, as Penrose remarks. (Fig. 161.) The drawing of the west front by Stuart, at the Institute of Architects, shows the starting stone of the part of the pediment which sloped up against the west front, and Inwood shows the springing stones of the front, finishing above with an egg and tongue. The height of the tympanum was about 3.6; its three stones, Inwood says, were in position in his time. No part of the cymatium, however, had then been found. Penrose gave a woodcut of a fragment found on the Acropolis, of which he remarks, "there cannot be a doubt but that it is part of the cymatium of the north portico, . . . the carving is unsurpassed by any details of the temple." The whole, shown on Fig. 162, was about 12½ inches high. The pattern figured by Penrose appears also at the Heræum of Argos after 420, as Dr Waldstein has pointed out. (Fig. 163.) The birds in both are extremely interesting, as perhaps the first appearance of the picturesque variety and naturalism which was slowly to creep into classical art. Dr Waldstein thinks that the Argos example was at least ten years the earlier, but this is very doubtful.



Fig. 163.—Moulding from Argos.

I find amongst the Stuart Papers in the MSS. Room (22152-3)

a minutely accurate drawing of a moulding very similar in decoration, profile, and size. It is without a title except for the query "Erechtheus?" but it certainly was a companion moulding to the other. (Fig. 164.) This explains a small fragment drawn full size by Inwood on his plate 11. Again, in the restoration of the Erechtheum by the French student, M. Genain, made many years ago, but only recently published,\* a short note reads: "M. Genain found a fragment which adapted itself so well to the mutilated cornice that he could do no other than recognise the old 'doucine,' and has made use of it in his restoration."

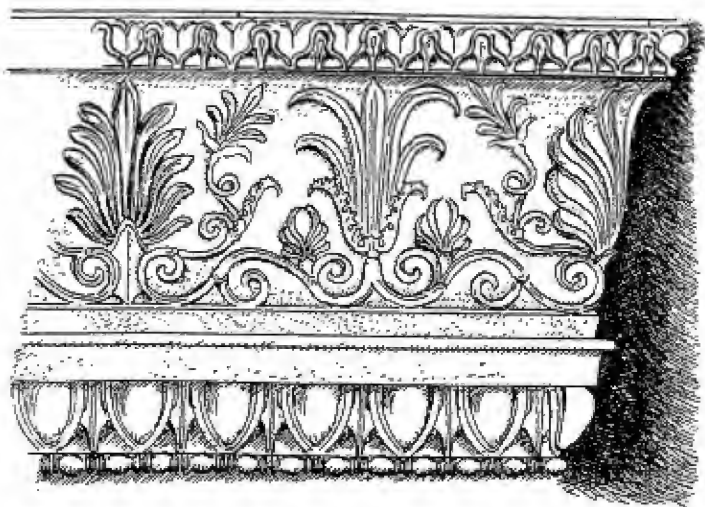


Fig. 164.—Moulding from a Drawing in the Stuart Collection.

The piece of which we have the drawing had a return end, but nothing is noted, unfortunately, as to its section.

It is possible that the piece in question was the cymatium of the eastern portico; but it might, however, be the original cornice of one of the doors. The cymatium over the north doorway at present is practically a copy of it in ruder workmanship.†

\* D'Espouy.

† In making the comparison with Inwood, plate 11, note that it is there drawn much *enlarged*. M. Genain's fragment was the same pattern as Fig. 164.

Although the cornice of this door is certainly part of a restoration, the resemblance to this original fragment goes to prove that the original decoration was recopied on it. The same is, I think, true of the consoles, for we know from the building inscription that the east door at least had consoles.

A detailed examination of this doorway was published by Mr Schultz in the *Hellenic Journal*, vol. xii. (1901), in which he proved that the present lintel was a restoration. (Fig. 165.) Even the holes where the work was "needled up" remain above the cymatium. From this account, and a further note by Mr Barnsley, we gather that the jambs are original, and held in position by T-clamps of metal fixed with the walling. The eyes of the rosettes on these jamb stones are deeply drilled out, and contain remains of wooden plugs, to the ends of which were probably attached little bronze caps, one of which is figured by Inwood.\* Certain door slabs,  $8 \times 2\frac{1}{2}$  feet, of marble inlaid with black, which are mentioned in the inscription, were probably the doors to the openings, 5 feet wide, between the west passage and the cella.† On this it may be observed that a fragment of a sixth century (B.C.) stone door at Argos has recently been described, and a similar door of about the second century (B.C.) is in the Louvre. In the East, marble doors continued long in use. At the Leeds Museum there are two or three fragments of marble doors.

At the east end is the "hexastyle portico." It was comparatively perfect when Stuart made the beautiful view now in the library of the Institute of Architects (engraved in Stuart and Revett). Of this we have in the Museum the entire right-hand column, the anta capital behind it, and parts of the carved band in continuation. This band becomes richer at the anta, where it resembles the ornamentation under the capitals of the columns. This is a point against Choisy's contention that this eastern portico is of later work than the northern one. It is the bringing of the anta band on to the column which makes the chief singularity of the Erechtheum capitals, and allies them with the Corinthian. The resemblance of this band of vertical foliage, of which acanthus is already a part, to the lower part of a Corinthian capital, makes it, I suggest, a step towards Corinthian.

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\* R. W. Schultz.

† S. Barnsley.

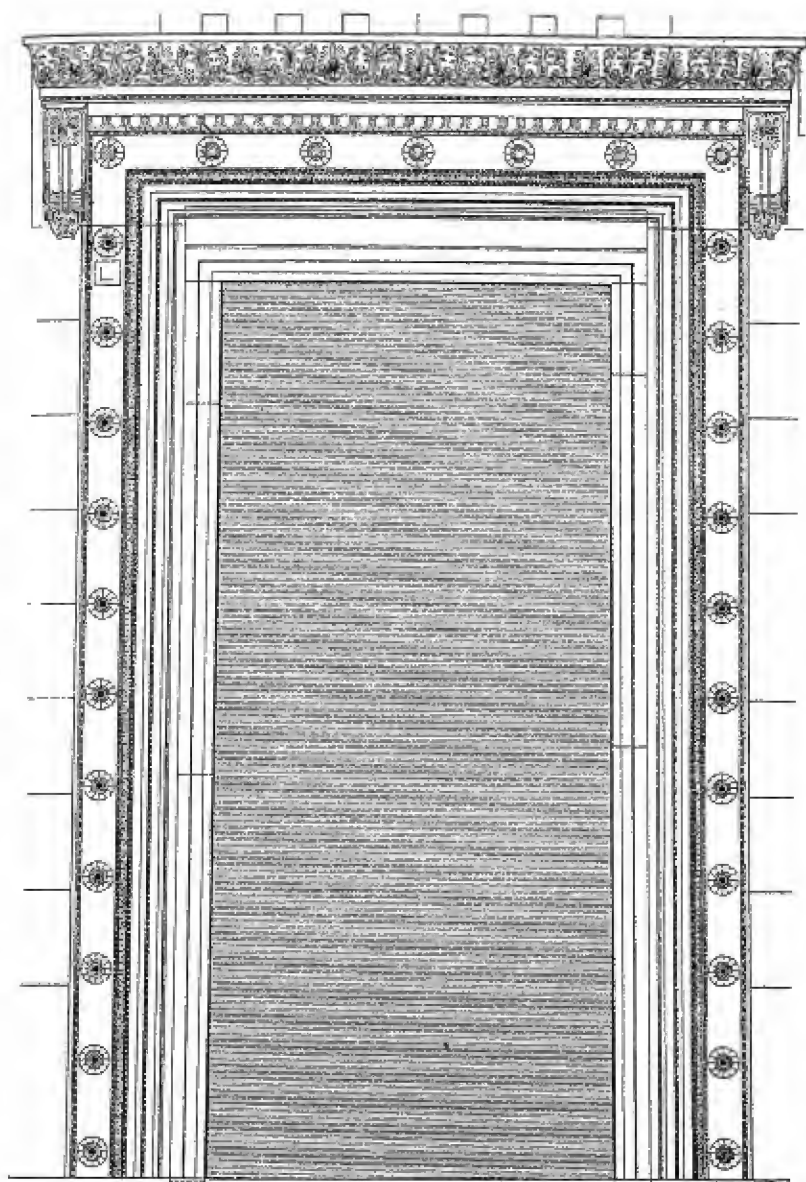


Fig. 165.—The Erechtheum, North Door, from a Drawing  
by Mr R. W. Schultz,



We have in the Museum a length of richly carved jamb-mould. In the recent excavations other fragments were found under the eastern wall, and 21 pieces are now known, some of which clearly belonged to a lintel or lintels. It has been shown that they all belonged to two windows in the eastern wall of the cella, one on either side of the east door.\*

The order of the Erechtheum is extremely rich and refined. The slender fluted columns diminish in what Penrose says is "the most delicate line which had probably ever been applied in architecture," being about .03 in 21.12. There is a curious irregularity in the spacing of the palmette band relatively to the twenty-four flutes below on the shaft, there being eighteen palmettes, nine of each alternate pattern.

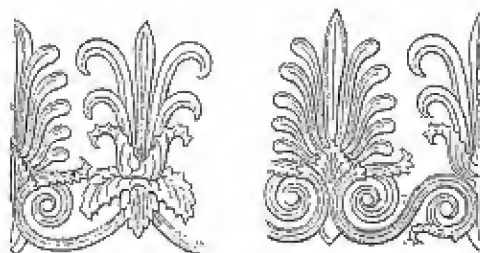


Fig. 166.—The Erechtheum, Details.

The curious flat side to the angle volute at the Museum is, I suppose, the result of a repair. There are several such splicings even on the Museum fragments (see Catalogue). The inner volutes of the angle capitals were mitred together, so as to show

only two halves, and were plain (*cf.* Fig. 155).

We also possess a slab of the lacunaria of this portico. Under the Parthenon I have ventured to suggest (p. 140) that the fragments of what appears to have been an acroterion may have belonged to the Erechtheum instead of to the Parthenon.

In the Museum there is a fragment of a volute (No. 445) which has a double spiral like the portico capitals, but it is smaller in scale, and the eye is carved into a flower. It is figured by Inwood (plate 20), who describes it in his chapter on the Erechtheum as found in a wall in the lower city not far from the Erechtheum on the north side—that is under the Erechtheum. "It is an ancient copy of the capitals of the Erechtheum with a small additional projecting rose carved on the centre of

\* *Am. Jour. Archaeol.*, 1906, and Fig. 160.

the volute, from whence it might be supposed that the centres of the volutes of the Erechtheum might have formed a rose." Now, turning to Puchstein we find figured (No. 18) a capital with an exactly similar volute. This is also described with the capitals of the Erechtheum, although Puchstein considered it to be later chiefly on account of the "unbeautiful" line of the cushion. It is a half capital and was found in the Erechtheum in 1862. I should have supposed that these portions of half capitals (see the restoration of the Museum fragment, Fig. 169) belonged to original attached columns of the west front, but they seem too small in scale. It is possible that these caps, however, belonged to attached columns in the interior. The wall between the western and central chambers had two doors best shown by Penrose and described by Inwood. Between these Furtwängler says it was probably divided into bays by pillars.

There is a further reason for thinking that these caps came from the Erechtheum itself. This is that its caps are so much like those of the Nereid monument that there cannot be a doubt that the capitals of one were copied from the other. Now the Nereid monument is assigned to the fifth century, or the early part of the fourth, and no one will put it later than 370-360 B.C. Yet the capitals of this building have the same "ugly line" for the cushions. The rose in the eye seems to be an early feature, cf. another figure given by Puchstein, and another small Ionic capital in the Museum figured by Inwood.

One of the great treasures of our Museum is the "Maiden" from the south prothesis. As it served as an architectural member it has been a little passed over, I think, as an example of pure sculpture. But after the Parthenon works it is one of the most perfect and best authenticated statues which have come down to us. It is of the school of Phidias, wrought while his influence was paramount.

A few years ago it was thought that such "caryatides" were an innovation at the Erechtheum, but similar figures fully a century earlier and about the same size have been found at Delphi. The casts of those at the Louvre show that these archaic figures were remarkably like those of the Erechtheum in gesture. An archaic relief found in the Acropolis also shows a figure which it is thought represents a caryatid (see Petersen).

Probably the idea of pillar figures came from Egypt. In the Museum there are also fragments of the anta (No. 411) and of the inner architrave of the prothesis of the maidens.

One of the most singular characteristics of this peculiar building was the use of coloured materials other than painting. At Olympia a black marble pavement was laid in front of the statue, and in the Propylæa the lowest course of the wall was in dark Eleusinian marble. At the Erechtheum this same stone was used for the fields of the pediment and for the friezes. To the latter, figures of small scale of white marble were pinned so that they appeared on a nearly black background. The figures themselves must have been brightly painted and gilt. Gold for the eyes of the volutes and for certain flowers—pro-

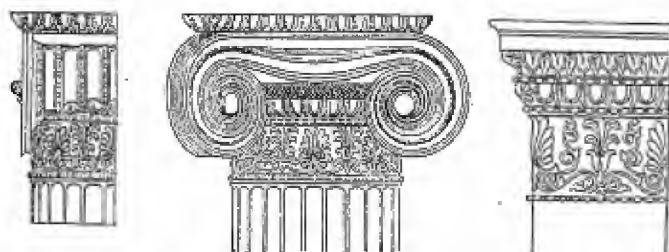


Fig. 167.—The Erechtheum Capitals.

bably of bronze in the coffers of the lacunaria—appears in the accounts.

The capitals have a guilloche band under the cushion. The eyes of this plait are drilled out and set, Inwood says, "with different coloured stones or glass"—black and very light blue in the first row, yellow and dark blue in the second, and black and light blue again in the third. This seems so extraordinary for Greek work that I have been glad to find an independent account with a coloured drawing of this decoration in the Greek and Roman Department.

This is a copy of a memorandum by Donaldson, entitled "Disposition of the Coloured Glass Beads in the Interlacing Ornament in the Capitals of the Tetrastyle Portico: Copy of F. L. D. The base was ornamented in the same manner." The careful drawing shows purple and bright blue in the first and

third rows, and yellow and purple in the middle. (Fig. 168.) Donaldson extracted some of these glass beads and brought them to England.

The note goes on to say of the capitals that, "The sinking round the volute was painted red. Yet this is supposed to have received an ornament of bronze. The iron nails still remain which" [were inserted in the volute].

Donaldson's remark about the deep spiral groove refers to Inwood, who found in them "bronze nails inserted with lead, forking out as shown [Y], and others on the plait ornament, by which some additional decoration of bronze was fixed." This has been amplified into the statement that there was a bronze fillet ending in a palmette, filling the spandrel between the volute and the cushion. Comparison with the other cap found in the Erechtheum (Fig. 169), the capital of the Nereid monument (Fig. 178), and above all with the capitals of the late temple of Augustus and Rome,\* which are an exact copy of those of the Erechtheum, shows that absence of a palmette is characteristic of all of them, as has been remarked by Puchstein. Watkiss



Fig. 168.—Detail of Plait inlaid with Glass.

Lloyd noticed red paint in the deep groove of the capitals of the Nereid monument such as Donaldson observed on the Erechtheum capital. This was, I doubt not, the original decoration, and "the bronze nails" were probably for suspending garlands.

Besides this use of coloured material, the usual painted decoration was added. Traces of red colour remain on the background of the anta and course of palmette ornamentation. The soffit of the lacunaria was decorated with frets (Inwood, plate 20), and Donaldson says that the mouldings had painted eggs and tongues, and that the faces of the beams also appeared to be coloured. It is said that paint has been found also in the flutes of the columns. (See *Journal of the R.I.B.A.*, vols. i. and ii.)

One or two points in the design and construction may be

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\* Is the drum of a column at the Museum, No. 446, from this temple?

further referred to. The prosthesis of the maidens was and is covered by large thick marble slabs, lightened with deep coffers excavated in the lower side, the upper surface being slightly sloped all round, and finished at the edge with a raised moulding with large egg and tongue, a small part of which is shown as remaining in the early drawings. The water escaped through a series of holes about 11 inches apart, as shown by Inwood (plate 15), which were pierced, I suppose, between the "eggs." The slabs are described in the accounts of 408, the discs on the architrave are also mentioned as unfinished—they are unfinished to-day.

The roofs and ceilings were of wood (cypress). According to Choisy's analysis of the building accounts the roof was in part open, and moulded and painted; in other parts there were coffered ceilings, the panels being covered with terra-cotta slabs.

The carved band which surmounts the cella walls in continuation of the antæ capitals has been more than once mentioned. (Fig. 166.) Not only at the Erechtheum, but at the temples of Nike and the Ilissus, this capping of the cella wall directly under the entablature was used. The base moulding

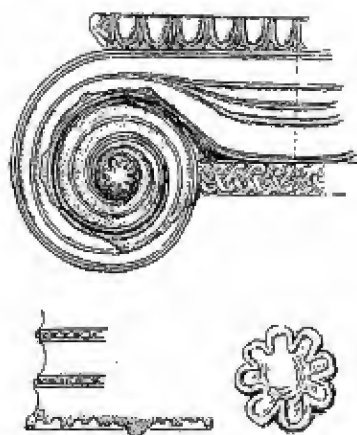


Fig. 169.—Fragment of Capital in the British Museum, restored by comparison with a capital published by Puchstein.

of the antæ also ran round continuously, and on it rested the course of big blocks—the orthostata.

Detailed building accounts of the Erechtheum have been preserved on some slabs, one of which is in the Inscription Hall of the Museum by the door to the library. They have been published and analysed by Choisy and others. Other small fragments were found in 1901. They form the records of a Building Board in the year 408. The architect was at this time Philocles. What was done, and what remained to finish, are noted, also wages and prices, all curiously like a mediæval fabric

roll. The master actually in charge was Archilocos, called the *architect*. He was paid thirty-six drachmas for as many days, while the clerk received thirty drachmas. A drachma a day seems to have been common wages. Sawyers and carpenters appear in the accounts as getting as much. Choisy interprets these facts by saying that the works were under the direction of an architect [Philocles], and an assistant architect [Archilocos], and that the latter was paid a drachma for a daily survey. I do not think that this explanation can be bettered, except that I suppose the assistant architect was present all the time. The contract for Lebadea, also edited by Choisy, provides that the laying of the stones should be approved by the architect, and all the joints and beds should be tested in oil (red dressing) in the presence of the assistant architect.

If an otherwise unknown architect, Philocles, was in charge in 408, we need not suppose that he was the original architect when it was begun, many—possibly twenty or twenty-five—years before. As Pausanias tells us that Kallimachos, who was especially celebrated for his delicate mode of workmanship, wrought the bronze palm-tree, which is spoken of together with the great lamp of the interior, Furtwängler has suggested that he was probably the designer of this remarkable building and the sculptor of the maidens, which we know were in place before 408. Petersen gives reasons for thinking that the bronze “palm-tree” was not a mere column-like chimney to the lamp, but that it actually resembled a palm-tree rising from the floor to the ceiling.

#### BASSÆ AND RHAMNUS.

The temple of Apollo at Bassæ, near Phigalia, was discovered by M. Bocher, a French architect working at Zante in 1765, while he was on his way to another site. It stands high in noble, mountainous, wooded country, not far from the sea. It was visited by R. Smirke about 1803, who made two excellent drawings, one of which is at the British Museum, and the other at the Institute of Architects. In 1812 it was excavated by Cockerell and others, and its sculptures and representative details of its architecture were obtained for the British Museum.

The ruins have recently been again explored by Cavvadias, and partially restored—I hope in the good sense of that most distorted word.

The temple was described by Pausanias, who says that it was the fairest temple in the Peloponnesos excepting that at Tegea, that the architect was Ictinus, and that the roof was of marble.

Contrary to custom, this temple stood north and south, but a chamber at the south end, the adytum, had a separate door facing the east. Along the interior of the larger cella were attached Ionic columns, reducing the clear space to about 14 ft. 6 in., and above them ran a sculptured frieze. As a

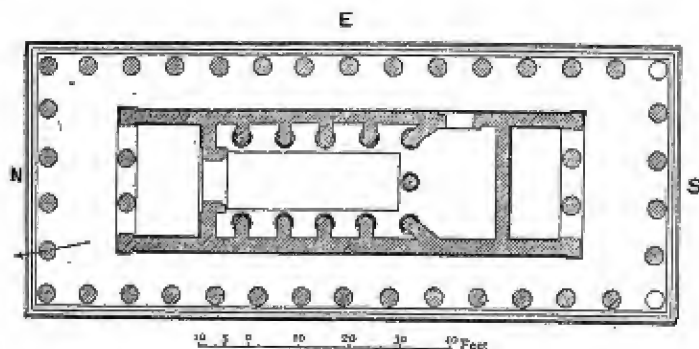


Fig. 170.—The Temple at Bassae.

matter of planning it would seem that this reduction of the space was either a provision for a roof of stone or else that the middle part was left entirely open, the recesses between the attached columns only being sheltered. Points in favour of this latter solution are that no fragments of a cella roof have been found, although parts of the covering of the recesses have been; that the central area was sunk a step from the rest of the floors; that the sculptured frieze seems more explicable on this supposition; that there was a separate sanctuary for the image, which, of course, was covered; and, finally, the analogy with another Apollo temple at Miletus, where the cella was open, with attached Ionic pilasters around the walls. This question of the roof has been much argued over.

Pausanias' remark might very well refer to the tiling only, for here at Bassæ the marble tiles were, Cockerell says, finer even than those at the Parthenon. At Ægina, again, marble tiles were only used at the eaves and up the verges, and Pausanias himself, when describing Olympia, remarks that the tiles were not clay, but marble. Moreover, the marble ceiling of the portico at Bassæ, with a bearing of 13 feet, was especially fine and it may have been this also, which, as Cockerell says, excited the admiration of Pausanias. We are thus thrown back on the evidence of the structure itself. Choisy, who accepts the open cella, says that an internal cymatium was found by the French expedition to the Morea, but the cymatium in question seems to be that of the external pediments, and the writer of the text appears to be rather opposed to the idea of an open cella.

Cockerell was in favour of a roof with a sky-light opening in it, and brought into evidence a small fragment of a roof tile with a margin which showed that it edged an opening. The size of this, however, is uncertain, and Papworth brought forward some evidence to show that the opening was only in the middle of a tile of the ordinary size, or rather that there was more than one.\* Such openings might have been mere smoke vents in the adytum, serving a similar purpose to the palm-tree chimney at the Erechtheum, or there may have been a light in the slope of the roof opposite to the statue for its illumination. From Haller's account it appears that only two small fragments of this kind were found, and they were discovered in the adytum. Papworth further suggested that the rafters might have been marble, but their size and the manner of fixing hardly allows of this interpretation, for the outer parts of the roof over the recesses at least, and Cockerell speaks of "the ascertained structure of the wooden roof" of the portico.

Much has been made of Cockerell's showing an interior view



Fig. 171.—From Athens.

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\* *R.I.B.A. Journal*, 1865, and Anderson and Spiers.



with a flat segmental ceiling, and "arch-stones" have even been looked for, but the segment is but a slight variation from the flat pitch shown on the sections; the size of the sky-light and the disposition of the coffering remains the same. It was a mere slight alternative suggestion as to the wooden casing of the ceiling. Altogether, I consider it probable that the entire centre part of the cella was open, and how small this was may be seen on the plan.

French plans omit the eastern door to the adytum, but Cockerell is conclusive on this point; it was of "scarcely secondary importance" to the principal entrance, and by it "the first rays of the dawn fell upon the image . . . the remains of which we found there."



Fig. 172. —Corinthian Capital at Epidaurus.

The most remarkable feature of the temple was the Corinthian column which stood in the middle of the opening between the adytum and the cella. This column was wholly of marble, unlike the others, which were partly of stone. The carving of its capital was very sharp and elegant, yet simple. Some have

argued that it must be more recent than the rest, but this view has passed away with fuller knowledge, although it is the earliest Corinthian capital known. Cockerell, who had no doubts on the matter, pointed to the central column in the internal range of the cella of the Parthenon as an analogy with the position of this one.

This Corinthian capital is an extremely interesting example of transition, which well shows how the new form derived from the Ionic. We have, as precedent conditions—1, the old Ionic with the angle volute; 2, the Erechtheum capital with a band of foliage in which acanthus leafage appears, which con-

verts a low capital into a high capital (a similar feature occurs under the archaic Naucratis capital, and on the top drum of an Ionic shaft from Halicarnassus in the Museum); 3, the Ionic capitals of Bassæ itself with volutes at all the angles; 4, there was the concurrent growth of scroll and foliage decoration generally as at the Erechtheum and on the steles. (Fig. 171.)

There is no reason, it seems to me, to call in aid metal-work technique, as Choisy and others have done, although Kallimachos, the author of the bronze palm tree of the Erechtheum, may very well, as according to the tradition of Vitruvius he did, have made the actual step in the development which, as it did happen, we may call inevitable. The Bassæ capital is so simple, and the Ionic volute is so marked a feature in it, that we might almost as well call it ornate Ionic as early Corinthian, indeed, Leake did call it Ionic. Cockerell in his restoration was biased a little too much in the "Corinthian" direction. He seems to have exaggerated the rows of acanthus leaves around the bottom, and especially to have minimised the *angle volutes*. By comparison with the later, and more lately found Epidaurus capital, we may say that these last were large and distinct. (Fig. 172.)

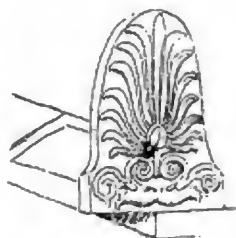


Fig. 173.—Antefix.

At Bassæ, then, all "three orders" were used, although the newest one was represented by only one central and precious column. At Tegea, in the temple built by Scopas, *c.* 395, and also in the Peloponnesos, the exterior was again Doric and the interior Ionic, but the inner row of external columns at the ends was Corinthian.

Another evidence of the new spirit of variation in Greek art is to be found in the lacunaria of Bassæ, where we find lozenge-shaped coffers as well as square ones. Similar coffers are found again at the still later rotunda at Olympia, *c.* 330.

Another variation is the coming of carved decoration in the place of merely painted ornament. The antefixæ of the roof have carved palmettes with acanthus leaves at the base. (Fig. 173.) Furtwängler considered that the acanthus was first adopted into ornament at the Erechtheum, and that the temple of Bassæ by

this mark must be later than the Athenian building. The cymatium of the pediment has a carved palmette ornamentation so much like that of the Erechtheum, and on a moulding of similar profile, that it seems plain one was influenced by the other. (Fig. 174.) That one we may reasonably suppose was the remote Bassæ, unless both derived from a common ancestor not yet determined.



Fig. 174.—Cymatium of Pediment.

Notwithstanding the tradition as to Ictinus being the architect, which may have nothing more solid to rest on than like stories as to Sir C. Wren in England, I am inclined to think that this building may be placed very late in the fifth century. A remarkable feature of the construction is the ceiling of the ends of the peristyle, which had a clear bearing of 13 feet. This was entirely of marble, but cut away to the slightest possible substance. (Fig. 175.) It was highly adorned with painted decoration, and the whole temple was finished with painting in the usual way. The external metopes were plain, but sculptured metopes were set over the inner row of columns, stopping over the antæ with one return triglyph at each end. This is a good deal like the arrangement of the frieze at the posticum of the Theseum. There are broken fragments of these metopes in the Museum,\* as well as almost the entire frieze of the interior. (Fig. 176.) Of architectural numbers there are specimens of the Doric and Ionic capitals, of the carved cymatium, and of the ridge and eaves tiles with their antefixæ. In fact these last fragments present to our study the complete roofing system of a Greek temple.



Fig. 175.—The Temple of Bassæ : Lacunaria.

The temple at Rhamnus has been incidentally compared with the Theseum on page 148. The temple was excavated by a British expedition, but we have in the Museum only small pieces of the colossal statue of Nemesis. One of these is a

\* On the subjects see *Athen. Mitth.*, xxi., p. 333.

noble fragment of the upper part of a head. Placed as it is on a bare shelf below the sight line, it seems comparatively valueless and neglected, but seen in a photograph the great style of the Phidean tradition shines out. Our Museum is so superb, and all that is done for us there is so liberal that it almost appears



Fig. 176.—Part of Sculptured Frieze, Bassæ.

like insolence to have any individual views on such points, but I do feel that this fragment would be better shown in almost any museum in the world. Like the Ephesus fragment (p. 32) it should be placed in a glass wall-case.\* It would form a fine

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\* See *Athen. Mitth.*, 1890, p. 64.

subject for an exercise in restoration by comparison with the Laborde head and others. Small as the fragment is, it suggests "a something" of that mysterious work the Venus of Melos.

#### THE NEREID MONUMENT FROM XANTHUS.

This tomb building was discovered and excavated by Sir C. Fellows. A note-book by Scharf in the MSS. Room includes a diary of the finds, thus: "Dec. 12, 1843.—At the excavations several sculptures were found: a slab from the city series showing the walls in three horizontal tiers, with soldiers between the battlements; a portion of the small frieze, with broad mouldings, and a figure on horseback; a fine statue of a draped female. Dec. 14.—Some architectural soffites [lacunars], with remains of colour in the centre of each, the ornaments being traced in fine lines of vermilion," &c. Scharf drew this ornament from the lacunars, and his drawing, together with many others, of Lycian monuments, are preserved in the Department of Greek and Roman Antiquities. His view of the basement and the site of the monument is published in the Museum Catalogue.

Fellows discovered a great number of sculptures and architectural members, most of which are now at the Museum. He found seven capitals, and a fragment of an *angle volute*, one whole shaft, large portions of others, and several bases, some cornice stones, showing traces of dentils on the lower side, pieces of gutter with lion's head spout, pieces of the raking cornice with evidence of marble tiling, the sculptured tympana of the pediments, the sculptured epistyle, with marks where it bore on the capitals, the egg and tongue moulding which surmounted the basement, with traces of the bases of the columns which rested on it and also of the sculptured Nereids which stood in the intercolumniations, some fine lions, fragments of a doorway with consoles, lacunar stones, antæ capitals, sculptured acroteria, and a large number of sculptured slabs, which were easily sorted into three series, which must have formed as many bands or friezes."

The style of the monument was in many respects different from other Lycian works; the marble was from Paros, the

blocks were put together with bronze cramps, and the sculptures had bronze additions.

All this material is sufficient to allow of a restoration being made, which shall be accurate within narrow limits, and the

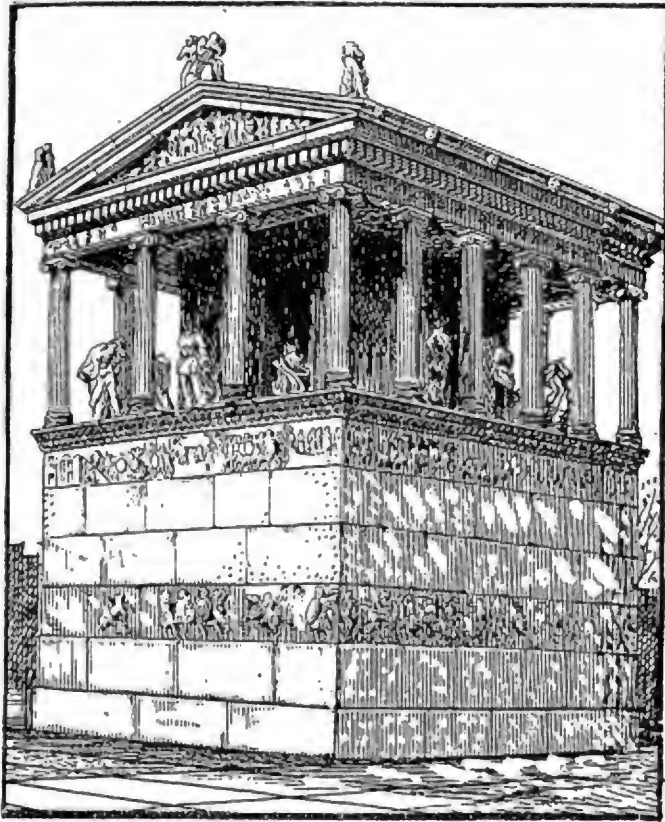


Fig. 177.—Nereid Monument. View amended from British Museum Guide.

model at the Museum which shows Sir C. Fellows' view, while it is the least satisfactory of all the schemes in detail, well enough represents the general character of the structure.

At the same time, although we have practically the whole monument in the Museum, a final restoration of the little build-

ing has never been published. The principal data are:—A, the dimensions of the basement, given as 22 ft. wide and 33 ft. long, by Hawkins and Fellows, and as 22 ft.  $3\frac{3}{4}$  in. wide and 33 ft.  $1\frac{1}{2}$  in. long by Benndorff; B, the size of the pediment as put together at the Museum gives an extent of 25.8 from point to point of the cymatium; C, the lengths of the epistyle blocks, of which two are about 6.9 long and two about 6.5; one other, which is nearly 7.6 long, must have come next the corner, thus overlapping the angle capital.

There is some discussion in the Museum Catalogue as to whether the pediment dimension (B) may not be excessive, as the sculptured tympanum may have been set in a rebate.

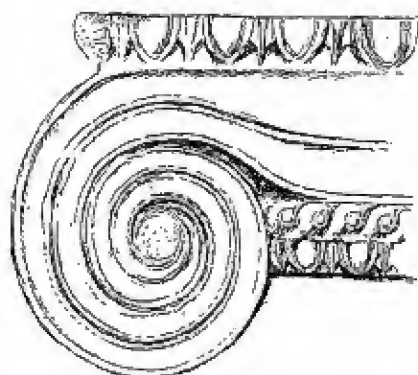


Fig. 178.—Nereid Monument, Capital.

This would, I think, be impossible, except for a small fraction of an inch along the top edge. There is very little room round about the sculpture, and to set the lower part in a rebate would hide it all the more behind the projecting cornice; moreover, it would "let the wet in." The total projection of the cornice, allowing for the bold dentils, which can just be traced on the under

side of the corona, looks about 1.9, and twice this taken from 25.8 leaves 22.2 across the epistyle, which agrees very exactly with the dimension of the basement (A). It is true there seems to have been some plinth or set back in the basement. In one place Hawkins speaks of  $1\frac{1}{2}$  in., in another of 5 in. This last was only inferred, because the marble slabs of the sculptured band were 1.4 thick, and the top course of the basement as found seemed to allow 1.9 for the casing stones. A space may have been left at the back, or there may have been a course of thicker marble below the sculptured band. Hawkins himself, in a sketch in the Museum, figures the width of the front at the architrave as 22 feet.

Again, three of the columniations of 6.9 and 10 in. at each end for lapping over the column gives practically the same dimension.\*

All this is perfectly direct and obvious, and we can now apply a proof, for five columniations along the flanks at 6.5 gives 31.1, and adding 1.8 for the epistyles 32.9, which perfectly fits the basement of 33.0. It is certain, then, that the peristyle had four columns in front and six on the flanks.

The lacunar stones at the Museum show that they were spaced about  $1.11\frac{1}{2}$  from centre to centre, and that about 3.2 showed between the peristyle and the cella. Allowing for a moulding on which they would have rested, this defines the width of the cella, the antæ capitals of which are preserved in the Museum. Falkener put two columns between the antæ, and this is quite a possible arrangement, as we find a pair of Ionic columns in antis at Cnidos ("Ionian Antiq.," vol. iii.). Falkener has also preserved a record of longer lacunar stones, each containing three coffers, which he puts at the two ends. He also shows the architrave and cornice of the door to the cella; to this the console fragment 937 doubtless belonged.



Fig. 180.—Nereid Monument, detail from Frieze.

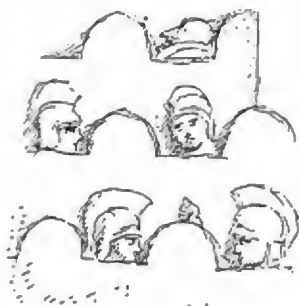


Fig. 179.—Nereid Monument, detail from Frieze.

After all this discussion we come back to the restoration, proposed by R. Hawkins in 1845, as being most in accordance with the prime facts. He acted as architect to the expedition, and his scheme showed four columns on the front and six at the sides. His drawing has been allowed to disappear, but it was described in the *Civil Engineer* for 1845, and there is a partial draft of the front amongst the papers in the Greek and Roman

\* If on careful measurement and plotting 1 or 2 inches more are wanted for this dimension it may be given to the central intercolumniation.



department, which shows that he made the width of the front at the epistyle under the cornice 22 feet and the front columniations 6.9.

Fellows published his restoration in 1848. He did not fully appreciate the architectural evidence, and on finding that he had recovered all *four* angle pieces of one of the sculptured bands he proceeded on the assumption that he had found the *whole* of the slabs of that frieze, and that by adding up their collective length he might obtain the total perimeter of the upper part of the monument. The resulting dimensions were a good deal smaller than the basement, and to make the architectural members fit he put four columns with *short* epistyles on the fronts, and only *five* columns with the long epistyles on the flanks.



Fig. 187.—Sculptured Architrave.

Falkener, in the "Museum of Classical Antiquities," worked over the evidence again, and showed that there were probably six columns on the flanks, and that the wider columniation were in front, but apparently fearing to increase the size too much more than Fellows, he made the curious proposition that the epistyle stones we have were longer than the columniations, which he suggested were cut only  $6.5\frac{1}{2}$  and 6.2, and not the total length of the stones. He thought he found a confirmation of this in the spacing of the lacunar stones, and assumed that three were *intended* to cover each bay. As he thus narrowed his front, he was driven to narrowing his pediment also, and thus arose the suggestion that the tympanum may have been lessened through being fitted into rebates.

Further, he objected to figures standing on the lower angles of the pediment as acroteria, but the evidence here again is against him.

The actual restoration of the front set up by Dr Murray at the Museum must approximate closely to the facts, but it is a pity that it was not placed where the height would allow the entablature and pediment to be placed over the columns. This is one of the completest Greek buildings known, certainly the most perfect in Western Europe, and an endeavour

might be made in some future rearrangement to re-erect it as a whole.

The column at the left is entirely ancient, but the proper capital, of course, had an angle volute. Fragment 938 is a part of the cymatium with a lion's head; 935 and 936 are the antæ capitals; 637 is part of the console from the entrance, it may be combined with the door architrave figured by Falkener. The capitals are, as remarked on page 167, derived from the Erechtheum. (Fig. 178.) There was no frieze, but the epistyle was sculptured, and on it rested the bold dentils of the cornice. A tomb at Pinara, of which a drawing by Scharf is in the Lycian Portfolio at the Museum, was also of this type. (Fig. 181.) So also was one figured in Texier's "Asia Minor," and the early Doric temple of Assos. The friezeless entablature, as has been said, is an Asiatic characteristic.

A good deal of painting can be traced on the lacunar stones. On the panel of one is a head, in others there were palmette ornaments. Fig. 182 shows the patterns on the margins of the lacunaria.

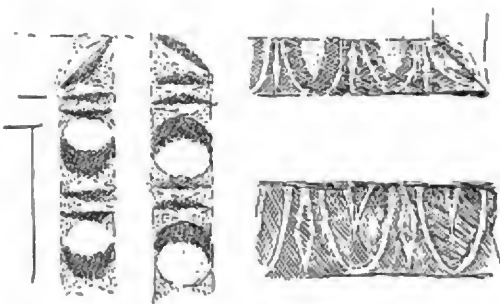


Fig. 182.—Nereid Monument, painted Decoration.

The date of the Nereid monument is still discussed. Furtwängler claims that it and the Heroon of Gjolbaschi belong to the fifth century, are of original Ionic style, and do not imitate Attic models; "the Dioskouros of the Acroterion, of which the head is extant, can hardly be placed later than 440, as it resembles the style of the metopes of the Parthenon." Kekule, in the official German handbook on Greek sculpture, still maintains this view, and discusses our monument before the Parthenon itself. On the other hand, Dr Six argues that it should be dated about 375 to 360 B.C. For this view he gives several reasons, including two points which have independently convinced me—the resemblance of the acroteria to those of Delos,

and a comparison of the capitals with those of the Erechtheum, "such is the similitude that it goes near to proving the direct connection."

German weight seems to be impressing itself on the guardians of the Museum, for in the last Guide (1908) we read, "The date and occasion of the building have been much discussed, but it is usually assigned to the end of the fifth century, and to sculptors greatly influenced by Athenian work."



Fig. 183.—Nereid Monument, Group from Frieze.

As to the latter point, the "Nereids" are evidently inspired by the "Ilithyia" of the Parthenon pediment (*ante*, p. 129), and passages in the friezes are as evidently influenced by Athenian works. The group Fig. 183, for instance, is an echo of the Parthenon frieze. In regard to the date, I would reinforce Dr Six's argument regarding the

Erechtheum by pointing to the fragment of the door console (937), which also has its prototype in the Athenian building. The capitals are practically copies of that described on page 170, except that they are shown to be later by the leaf pattern of the central bands on the rolls, which resemble the capitals of the Mausoleum and Priene. Notice the double volutes, the guilloche under the cushion, and the moulding interposed between the rolls and the abacus on each side.

The statues of the "Nereids" are rather unhappily described as running; they all rest on marine creatures, fish, swimming bird, crab, &c., and seem to glide on the wind. They are best described and most poetically explained by Dr Six as *Auræ*, personifications of the Breezes surrounding the Isle of the Blessed,



Fig. 184.—Bronze at B. M. Cf. with Acroterion.

where the dead rest. They are "young maidens, clad in the thinnest garments, sailing by the aid of their mantles over sea and shore, indicated by a fish, a dolphin, a water-fowl, a crab, and a shell ; they hover over the water without touching it, as is especially to be seen by the swimming water-fowl beneath one of them." \* The carrying off of the daughters of Leukippos by the Dioscuri on the acroteria symbolises death.

## PRIENE.

Many fragments of the temple of Athena are gathered in the British Museum. It was first examined by a British expedition in 1768, and there is in the Print Room an exquisite drawing by Pars, made at that time, of the ruins on a height above a wide plain, through which winds the Meander, and some of the original memoranda are preserved in the Greek Department. It was excavated so lately as 1870, and the stones



Fig. 185.—Priene, Dedication Stone, with name of Alexander.

were brought to England at the cost of Mr Ruskin. There are capitals of the order and of the antæ, one of which is set up in the Inscription Hall above a large part of one of the antæ. There are also portions of the cornice and gutter, of the raking cornice, and of the lacunars. Three or four small fragments are also in the Louvre, the material result, I suppose, of the exploration of Rayet and Thomas, which was described in an excellent volume.

Still more lately, and, it must be admitted, more thoroughly, it has been explored by a German expedition. Many characteristic parts have been set up in the Pergamon Museum at Berlin, and it has been described by Wiegand. These inquiries have in much modified our knowledge of the order.

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\* A note of my own, made before I had read this, reads, "One at least is flying *over sea*, see the dolphin and sea under it."

In the English text we are told that in "all the restorations hitherto published the height of the column has been assumed to be nine diameters; but it having been ascertained from the exhaustive inquiry by Mr Penrose that the real height was not less than *ten diameters*, the temple in these plates assumes a more elegant form." Penrose's calculations resulted in giving a height of 42.30 and 42.95 feet to the column, without the plinths, while Rayet and Thomas estimated it at 11.75 metres.

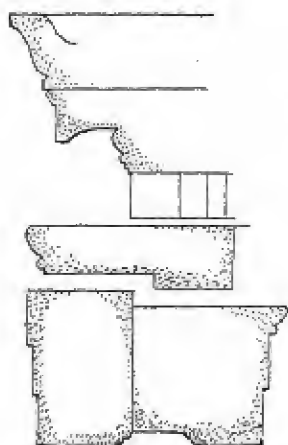


Fig. 186.—Priene, members of Entablature.

Penrose had very inadequate data; the measurements on which he based were taken *within* the flutes, as the fillets were so broken, and Pullan gave the full bottom diameter as 4.230, which is about an inch in excess of the French and German estimates.

Penrose's total height therefore works out to nearly  $10\frac{1}{4}$  diameters, while Miletus, the later and otherwise tallest known column, is  $9\frac{1}{2}$ , or  $9\frac{3}{4}$ , and we saw that the Mausoleum, another work of the same architect, Pytheos, had a height of only eight diameters.

The Germans proceeded by another method, taking the top courses of the antæ as restored in our Museum, and the bottom ones left on the site, and allowing for what seems to be missing they estimated the height as 11.40 metres, or less than 9 diameters. An American, Mr Dinsmoor, working by the same method, gives the proportion as exactly 8.814. An error of  $1\frac{1}{2}$  diameters or about 6.0 is rather serious in the minute engravings of the English volume.

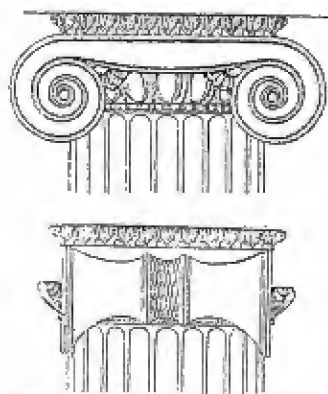


Fig. 187.—Priene, the Capitals.

If the column at Miletus, which seems to be the only one

whose height is perfectly sure, has a height of about  $9\frac{3}{4}$ , and Priene had probably a height of about  $8\frac{1}{2}$ , there is very slender basis for the theory of proportional measurement.

The composition and height of the entablature has already been spoken of on page 23. The German restoration showing how the stones fitted into one another leaves no room for doubt of its correctness, and that the order had no frieze. If it had not been for the compelling

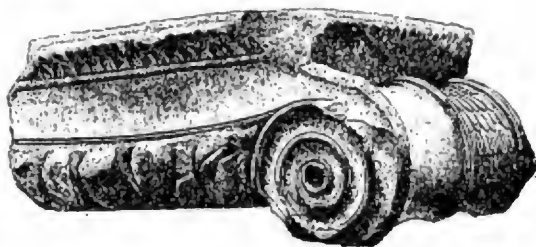


Fig. 188.—Priene, the Capitals, from "Ionian Antiquities."

force of a preconceived idea, the first English account would have set forth the true form. I find amongst the original notes the members of the entablature associated as in Fig. 186, where it is plain that the cornice notched down

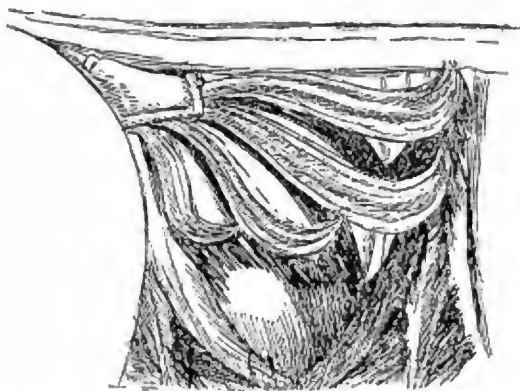


Fig. 189.—Priene, Palmette from Capital restored.

over the outer stone of the architrave.

By correcting the height of both the columns and of the entablature we make a reduction of 8 or 9 feet on the whole order. It is on such a basis that elaborate calculations of proportions rest! Mr Dinsmoor, wishing to compare Priene

with other works, says the frieze at Priene "is actually omitted, but to bring it into relation with contemporary examples, I have restored a frieze." He then gives friezes to Ephesus, and the Mausoleum as well. Since I first discussed this point the results of

the last explorations at Ephesus have been published, and the early temple is restored without a frieze. Now, the early and later temples at Ephesus, the Mausoleum, and Priene form a series, of which the first and the last are admitted to have had no friezes. The facts in regard to the other two point in the same direction, the analogy with the others, together with a general Ionian tradition, are sufficient grounds for our accepting it as proved that all four had no friezes.\*

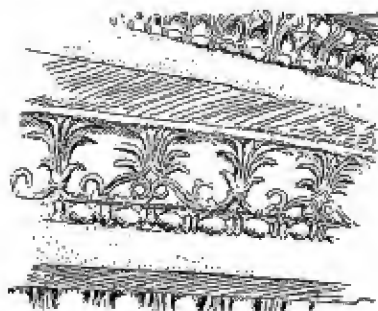


Fig. 190.—Priene, detail from Lacunaria.

The Priene capitals at the Museum are almost exactly like those of the Mausoleum. I give a restoration of the palmette ornaments, which were largely undercut as they passed over the eggs and tongues. At Berlin there is

an angle volute with a palmette ornament at the back like those of the Mausoleum. (Fig. 44.)

At the inner angle the volutes were complete, as shown by the engraving in "Antiquities of Ionia," and in a sketch by Huyot given in "Didymes." The finished eyes of the volutes were marble studs inserted into sunk circles. One of the unfinished eyes shows slight indications of lines and the centres from which the curve was struck. Some of the fragments of carved mouldings are picked out in colour. (See coloured plate in Rayet and Thomas' work.)

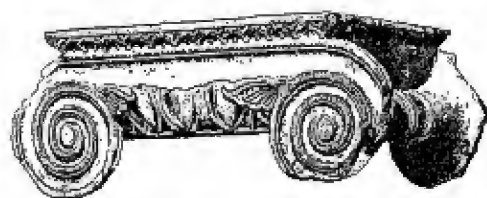


Fig. 191.—Priene, Capitals of Propylæa.

At the angle of the cornice in the square space between the

\* Dinsmoor in *American Jour. Archæ.*, 1908: a valuable article on the Mausoleum which, except in regard to the details of the order, agrees with the scheme set out above in Part II.

dentils was a large palmette. The gutter (as shown in Figs. 22 and 23) was copied from Ephesus. The coffers of the lacunaria were very rich and deep, having three recesses with carved mouldings; the lowest a fine egg and tongue, and the upper two, as shown in the sketch from the Museum. (Fig. 190.)

Several large pilaster-like caps from square piers were found on the site. Some are in the Museum. They seem to have supported statues, and they are later than the temple. Some are shown in Vulliamy's etchings and also in Donaldson's sketches at the Institute of Architects. A smaller one at the Museum is described as a pilaster cap, but it seems to be the anta of a small building—the Propylæa? It agrees well with the size of one of the ordinary capitals of the Propylæa. (Fig. 191.) Fig. 192 shows a naturalistic element in the carving of the antæ of the temple.



Fig. 192.—Priene, Lilies from carving.

#### THE LION TOMB AT CNYDOS.

Of this noble work only the recumbent lion which surmounted the pyramid was brought away. Details of the structure were published by Newton and Pullan, and the original sketches are in the MSS. Room at the Museum. Sir C. Newton thought it commemorated a naval victory of the year 394. The monument stood on a rocky promontory 200 feet above the sea, and was about 40 feet high, the length of the lion is nearly 10 feet. "The eyes now wanting were probably of vitreous paste or perhaps of precious stones. Pliny tells of a marble lion on the tomb of a prince in Cyprus with emerald eyes." From the sketches I give a detail of one of the stone shields about 3.6 diameter, which were set between the columns of the basement. (Fig. 193.) This monumental use of shields has been

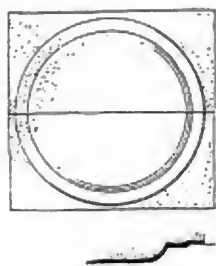


Fig. 193.—Lion Tomb, detail of Shields.



before referred to under the Parthenon. An example of a memorial inscription written on such a shield may be seen in the Inscription Hall. Fellows illustrates a tower from a city wall in Lycia with a similar shield upon it. Pausanias tells of a hall at Elis decorated with shields "not made for war."



Fig. 194.—Archaic Demeter.

With the tomb I must mention the statue of Demeter, also from Cnidos, one of the most delightful works in the Museum. Its style seems to me to be remarkably like that of the head of "Apollo" found at Delphi, of which there is a cast in the Louvre. Is it only a coincidence that it was found at the treasury of the Cnidians? The Demeter follows a traditional type, see Fig. 194, from *Athen. Mitth.*, 1895, and

with that compare a similar figure on the Harpy tomb, which by this analogy should also be Demeter.

#### MILETUS, SALAMIS, AND NAUCRATIS.

The temple of Apollo Branchidæ, near Miletus, was probably in its mass the greatest temple ever erected, but the temple of Samos may have been still larger in area.\* It is represented in the British Museum only by some archaic sculptures brought from its sacred way. Important fragments of this temple, however, form the greatest architectural possession of the Louvre, where are exhibited five or six large capitals from the pilasters of the open cella, parts of the frieze of griffins which ran between them, and some colossal highly ornamented bases from the portico, of which the plinth blocks are about 9 ft. square. (Fig. 195.) The lowest diameter of the columns was 6 ft. 6 in., and their height was nearly 65 ft.

In the most recent work on this temple, MM. Pontremoli

\* See Pontremoli, "Didymes." As a result of the recent excavation at Samos the size is given as 111.95 m. by 56.25 m. Cf. above, p. 45 (*Athen. Mitth.*, 1903, p. 471).

and Haussoullier \* have sought to collect every slightest reference to it. I shall only here note one or two points from English sources unknown to them.

There is in the British Museum MSS. Room an account of a visit to the temple in 1679 by Dr Covell, once chaplain to the Levant Company. This, the earliest modern description, is accompanied by a sketch, of which a poor rendering is given in an engraving in the account of Spon and Wheeler's travels. They did not visit the site but obtained the view from Dr Pickering, physician to the Company, who, with Mr Salter, visited the temple in 1673. Wheeler, Pickering, and Covell all met in Constantinople, and travelled thence to Smyrna together.

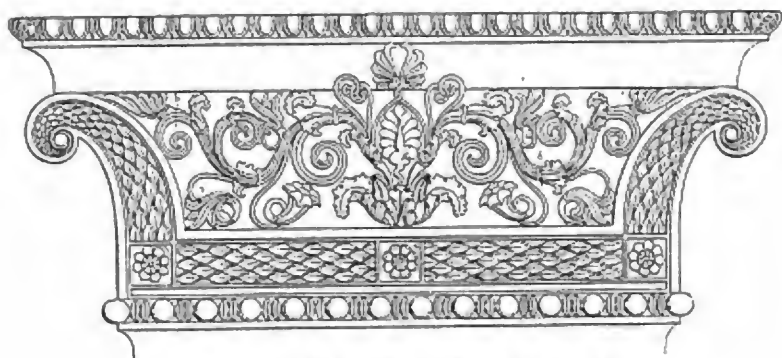


Fig. 195.—Miletus, Capitals of Pilasters.

Covell's account of his visit in 1679 is as follows:—"This morning, not long after five, pitch our tent near ye Temple of Apollo Didymeus, called by the Turks Yoran. The remains of this building shows ye greatest pomp and magnificence of all I have seen in Asia. The stones are all pure white marble, most of them very large. On many of them a few letters are cut, particularly in one place. On certain of them are certain figures, carved most curiously, such as images of griffins, in some defaced, in others remaining almost entire. On a large chapter is a fair image of an angel [a winged figure, now in the Louvre].

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\* See Anderson and Spiers for abstract. This site was cleared further last year, and much light has been thrown on the destruction of the temple.

One chapter is 8 feet broad. One entire piece of marble is 17 ft. 4 in. long,  $3.9\frac{1}{2}$  broad,  $3.2\frac{1}{2}$  thick. Of this great structure remain standing only three pillars. Two of them, which are fairer than the others, are joined at top with a transome (architrave) of marble. Each of them are made up of about 16 or 17 pieces of marble, very evenly laid, one upon another, and are of channelled work. The compass of one of them is 19 ft. 6 in. . . . In the inscription on the other side of the pillar is also found . . . so that it is not to be doubted but that these ruins are all that remain of that most magni-

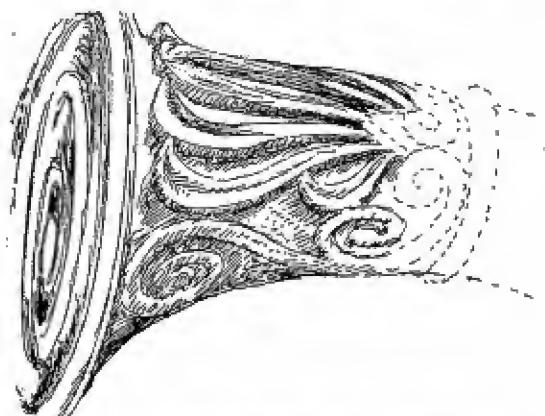


Fig. 196.—Naucratis, part of Ionic Capital.

ficent temple which the idolatrous Milesians erected to Apollo Didymeus."

It appears from this that Covell saw a dedicatory inscription, probably on the anta, which, as the sketch which accompanies the description shows, was still standing to its full height. This sketch also indicates a number of short inscriptions on the stones of the cella; they have been corrupted by the draughtsman, and still more by the engraver, who prepared the similar view for Wheler and Spon.

According to Pontremoli, many of the blocks of the walls still bear quarry marks, usually IE or IEP, signifying that they were for the temple works, together with other variable letters, representing proper names.

In 1820 several drawings were made of the fragments on the site by the French architect, Huyot, who was in the company of Donaldson, as appears from some sketches made at Priene and Miletus by the latter, now in the Library of the Institute of Architects, on one of which the presence of Huyot is mentioned.

Vulliamy etched several of the capitals of the pilasters, and also the griffin frieze.

I may associate with Miletus the fine bull-headed capital from Cyprus in the British Museum. The ornamental female figure at the side is almost exactly like the "angel" of the Miletus capital. Other bull-headed capitals have been found at Delos, Ephesus, and other places. A gold pin in the Museum, with a head in the form of such a capital, is the finest design of all of them. The comparison with Miletus goes to show that the Salamis capital is later than it is catalogued. I should date it *c.* 250-200. It must derive from the Persepolitan capitals.

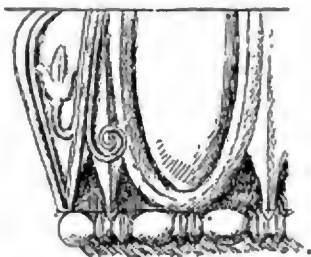


Fig. 197.—Naucratis, Egg and Tongue Moulding restored.

With these may also be mentioned some fragments from the later Apollo temple built by the Greek colony at Naucratis. These comprise a part of an Ionic capital (*c.* 250), of which Fig. 196 is a partial restoration; some fragments of an egg and tongue moulding, with an interesting termination against the angle, which I have put together in the restored Fig. 197; also a knot ornament which appears also on a capital recently found at Delos. There are also some still more interesting fragments from an early temple (*c.* 550-500), being parts of an Ionic column which are to be compared with the archaic order from Ephesus.

#### TEOS AND MAGNESIA.

The Ionic temple at Teos, excavated by Pullan, was published in the fourth volume of "Ionian Antiquities." There are in the Museum only two slabs of sculptured frieze which were brought away from it, but they are so entirely bad, and fallen

again into barbarism, that it is difficult to understand why this temple had any reputation.

The temple of Dionysos at Teos and the temple at Magnesia on the Meander were according to Vitruvius the work of one architect, Hermogenes, who, he says, wrote a description of the Ionic pseudodipteral temple of Diana at Magnesia and of the monopteral\* temple of Bacchus at Teos. The pseudo-dipteros, he explains, has a single row of columns at the distance of two intercolumniations and a diameter from the cella. The temple at Teos was eustylos; that is, its intercolumniations were of  $2\frac{1}{4}$  diameter. "Its proportions were discovered by Hermogenes, who was also the inventor of the octastyle or pseudodipteral† formation; he omitted the intermediate columns in number 38, and thus great space was obtained around the cella." It is difficult to say what all this means, a monopteros as wide as a dipteros is found in one of the early Doric temples of Pæstum, indeed it is selected to illustrate the word pseudodipteral in the American "Dictionary of Architecture." The Ionic temple of Messa on Lesbos, described by Koldewey, and dated by him about 400, is also of this formation, which, as shown below, is about two centuries earlier than the temples of Magnesia and Teos. The temple at Magnesia was excavated by the French about 1842, and large parts of the sculptured frieze and the carved cymatium of the cornice are in the Louvre. It was a large Ionic structure about 190 by 100 feet, the columns were 40 feet high. The site has been recently re-examined by a German expedition, and part of the order has been set up in the Pergamon Museum at Berlin. Foundations of an earlier building of the dipteral formation were found. In the rebuilding the intermediate row of columns was omitted. This seems to be the true basis of the confused account in Vitruvius. The entire frieze was occupied with an Amazon battle—very poor, coarse, and ineffective. The figures are only so much space-filling instead of important stories. Although the "architrave order" of Ephesus, Priene, and the rest has here been given up, it is

\* Notice this use of the word. In his general description of temple types he seems to limit it to circular buildings without a cella, but it must mean properly what it means here, a temple with one row of columns.

† Omit "or," and read "octastyle-pseudodipteral"?

interesting to observe that "under the mighty dentil course the frieze shrinks to almost an unimportant band of decoration." Including the mouldings along the margins it is only about 2.8 deep. The cymatium alone must be fully half as deep, it is in short lengths of about 4 feet, carved with a lion's head in the middle of each, but very poor and dull. The whole entablature was about 10 feet deep. Diameter of columns was *c.* 4.7. The bases were carved after the model of Miletus.\*

The Germans date this work as built in fourteen years, from 221 B.C. In the English account of Teos we read, "It seems probable, as Dr Hirschfeld suggests [from the inscriptions], that the temple, of which Hermogenes was the architect, was planned if not completed between B.C. 193 and 133. On the other hand the temple may have been restored or rebuilt in Roman times."

Another Ionic temple, the Smintheium, excavated and described by Pullan, may be briefly mentioned here as one of the most elegant later works. Its date has never been accurately settled. One of the most definite criteria is a comparison of the capitals with those of the Ptolemaion at Samothrace made by O. Puchstein in his work on the Ionic capital, Figs. 34, 35. Both have an almost identical scroll ornament on the cushion of the volute, and both must be of about the same age.

#### THE CHORAGIC MONUMENTS OF ATHENS.

Of the famous monument of Lysikrates our Museum possesses only casts, but casts which are most valuable records, as they were taken more than a century ago, when the sculptures were in a much better state. In the Elgin Room is the frieze, and in the basement one of the Corinthian capitals. There are also many valuable drawings in the Greek and Roman Department, and with the Stuart Papers in the MSS. Room. The monument is known, from an inscription which it bore, to have been erected in 335. This elegant little Corinthian structure is too well known to need description. Two or three points only may

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\* The great sculptured altar was found to the *west* of the temple: *cf.* Ephesus; also, I think, Samos.

be mentioned. The columns are really complete, the closures of the small round cell being set between them, so that the columns stand in half round channels at the joints, and covering them. The architrave and frieze are in single circular blocks, and the roof is in another. It is really designed as a jointless fabric, that is, no joint occurs except behind the columns and at a moulding.

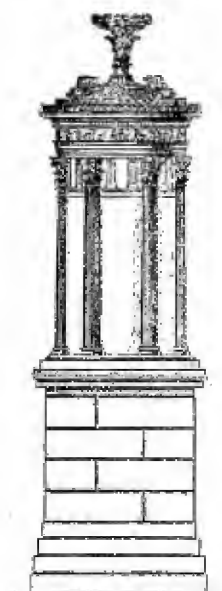


Fig. 198.—Monument of Lysikrates.

The marble roof-stone Stuart calls a cupola, but this raises a false idea, although it is hollowed out inside for lightness. Outside it approximates to a very flat cone, but having a slight curvature, exactly the curvature of the cover of a vase or one of the turned marble toilet boxes. It fits on and into the circular cornice-stone like a lid. We know little about the development of circular buildings, but this one seems to have been designed as a pyxis, with a lid and a knop on the top. The low-sloping cone or pyramid is the classical form for a round or polygonal structure.

The octagonal "Tower of the Winds" was roofed with a low-pitch pyramid. The rotundas at Olympia, Epidaurus, and Samothrace must have been covered by low cones. So must the Odeon and the Skias at Athens. It is a mistake to think of the cupola, especially as seen from the outside, as a classical form. The ornament carved on the roof-stone, we are told, represents tiles, but it is rather a leaf pattern. We find it first, so far as I know, on the volute rolls of the capitals of the Nereid monument, but as a painted pattern it appeared on the Ionic capitals of the Propylæa (*R.I.B.A. Jour.*, vol. i.). On the top is a very handsome finial with three branches, which supported a tripod. (Fig. 200.) Traces of painted decoration have been found on this monument. Fig. 201 is the capital.

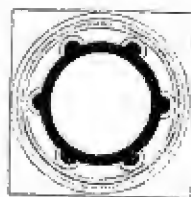


Fig. 199.—Plan.



Fig. 200.—Detail of the Finial.

We possess also the statue from the choragic monument of Thrasyllus, which was placed above the front to a small, rock-hewn cella, the statue being seated, and probably holding a tripod in its lap. It was built in 320, and altered later. The entablature of the front was supported in the middle by one pier, square, or rather oblong on plan, the narrow face fronting outwards. There are similar square piers, like detached antæ, at the Propylæa and the Temple of Victory. In Rome such marble piers presenting their narrow sides to the front are to be found on the Palatine.



Fig. 201.—The Capital.

#### THE LYCIAN TOMBS.

A series of tombs, more or less complete, and several fragments, well represent the sepulchral monuments of Lycia explored by Fellows. There are three principal types of those tombs—(1) Rock-hewn chambers with temple-like fronts; (2) chest or sarcophagus-like tombs, raised high on stone shafts or basements; (3) ark-like tombs, imitating small wooden shrines set on basements.



Of the rock-cut tombs there is a valuable series of drawings by Scharf preserved in the Lycian Portfolio in the Greek Department. Fig. 181, taken from one of these, is like the sculptured epistyle of the Nereid monument. Several show other varieties of the characteristic Ionian cornice of these monuments.

The "Lion tomb" at the Museum is of the second or "chest type." The slabs in the Museum were elevated on a tall base about 10 feet high. On the top of the sculptured sarcophagus would have been a heavy, widely-projecting cover. This tomb is generally dated as of the seventh century, but there is a general tendency, it seems to me, to give too early a date to all these Ionian monuments, including the Nereid monument.

The Harpy tomb from Xanthus rested on a shaft 17 feet high. Its projecting cap-stone remained. With a high plinth

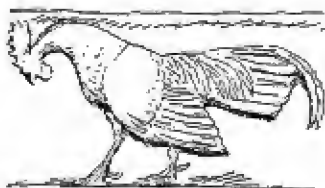


Fig. 202.—From Xanthus.

below the shaft, it looked like a little turret with a deep sculptured frieze. This "frieze" was fully painted, the background, as usual, being blue. It is now dated soon after the middle of the sixth century, but comparing it with the "ark tombs," which, in some respects, seem so

primitive, and yet belong to the fourth century, I cannot see why it might not be nearly a century later. The bottom moulding with its painted decoration, traces of which can still be seen, surely points to the fifth century. No. 86 is a noble procession, I should say of the fifth century; 82 is a delightful frieze of cocks and hens, bright and natureful. (Fig. 202.) This can hardly be earlier than the fourth century. The two "ark tombs" are in the Mausoleum Room. One of them is dated by an inscription as wrought *c.* 370.

All these monuments appear to have been painted; there are plain traces of colour on a slab with a sphynx in the Museum, and on the Harpy tomb some patterns may be discerned where the painting has protected the surface.

Memoranda in Scharf's note-books refer to the colour of these Xanthian monuments. On January 22, 1844, was found

the relief of the sphynx ; the wings were patterned with feathers, the hair yellow, the background blue—"intensely bright blue." On February 2, 1844, was discovered the pedimental slab, now in the Museum, with a harpy above an Ionic column ; it was "richly coloured." The slabs with cocks and hens were found at the same time.

We have had evidence enough that painted decoration on external marble work was regarded as a necessary completion from the earliest days of Greek art to the latest.

#### MYCENÆ.

In the Lycian Room of the Museum has lately been erected a reconstruction of the greater part of the pillared gate of the "Treasury of Athens" at Mycenæ. It is made up of parts brought to this country by collectors at various times. Some belong to the Elgin Collection, others transferred from the Institute of Architects belonged to Donaldson, and the most important fragments of the pillars recently obtained were brought from Greece nearly a century ago by the Marquis of

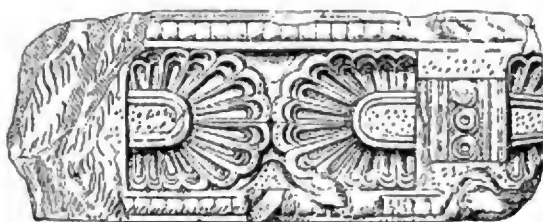


Fig. 203.—Mycenæ, part of Frieze.

Sligo. One of the fragments (Fig. 203) I had the fortune to find standing unrecognised in the porch of a collector's house in London. On my calling Dr Murray's attention to it, he obtained it as a gift from the proprietor.

The gateway, and the fragments which were found round about it, have often been described and figured by Dodwell, Gell, Donaldson, and others, and several restorations have been put forward, the latest and best being that of Mr Phené Spiers, now placed with the fragments in the Museum. In one respect,

however, I think a former more extravagant restoration by Perrot and Chipiez is to be preferred. This is the suggested filling of the triangular opening above the doorway. Perrot and Chipiez place here certain slabs of dark red marble (sometimes mistakenly called porphyry), which are decorated by bands of spiral ornaments, some of which have sunk eyes, in which studs of coloured glass must have been set. Mr Spiers, on the other hand, takes these slabs to case the adjoining pieces of wall, the slanting edges of which framed the opening. It is clear that the slabs did occupy one or other position, for they have joints which rake at

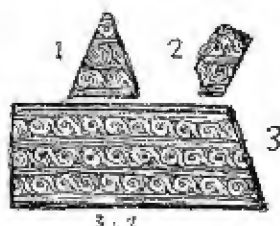


Fig. 204.—Mycenæ, Fragments.

the required angle. (Fig. 205.)

Portions of the slabs covered with spiral ornaments have been drawn several times, but often so inaccurately that it is not possible to say how many separate stones have been found at different times. Perrot gives 1, 2, and 3, all of which have slanting ends, and of which 1 forms, indeed, the apex of a triangle. (Fig. 204.) He also gives another long piece, without slanting ends, as from the British Museum, but this is a mistake. The British Museum piece has one slanting end and a broken end, and it is a question whether Perrot's 3 is not a restoration of this. In the "Expedition à la Morée" a piece with a slant end is given much shorter in proportion than the British Museum fragment, and one might suppose it to be different were it not that a plainer piece with one row of spirals and some circles is figured, and this seems to be the same as a stone illustration by Dodwell, and now in the British Museum.

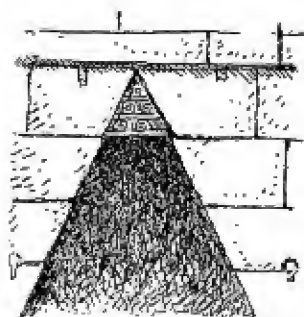


Fig. 205.—Mycenæ, Apex of opening above Door of Tomb.

There are only three pieces, then, with slant ends of which

I feel certain, 1, 2, and the British Museum piece, which may be 3.

The triangular piece 1 was found in 1878, and it is described by F. Thiersch.\* It accurately fitted the apex of the opening, and this, to me, seems to settle the question. (Fig. 205.) There is, however, the contributory evidence that, out of so few known slabs, so many as three have sloping ends, for it is obvious that the proportion of slanting ends required is greater to fill the triangular space than would be required to fill the two side spaces, the outer boundaries of which were necessarily upright. That is, allowing for some intermediate joints, there would have been more uprights than slants at the sides, and more slants and less uprights in the triangle.

The restoration at the Museum has corrected a mistake in regard to the capitals which appears in almost all illustrations of

them. They are adorned by a series of chevrons, which

in illustrations are shown as arranged, so as to oppose one another symmetrically at the central line. They really all pass around in one direction: < <, not > <.

The best early sketch I know of the capital is a drawing in one of Gell's sketch books in the Print Room of the British Museum. He was the first, also, I believe, to recognise that it was a capital and not a base. He says, "Near the door

observe a semicircular pilaster and its *capital* very curiously carved in spiral and zigzag lines." (Fig. 207.)



Fig. 206.—Mycenæ, Column and Capital.

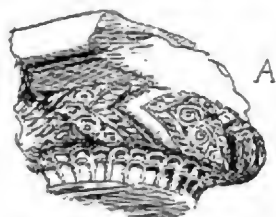
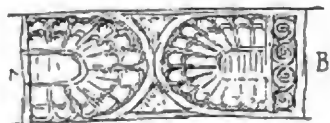


Fig. 207.—Mycenæ, from sketches by Gell.

\* *Athen. Mitth.*, 1879. See also 1896.

Another slight sketch is of a piece of Mycenæan frieze, which he notes was "in a church near the Treasury," and of red material. This, I think, from the size which is figured on the sketch, may be the very piece described above which was found in London, and is now in the British Museum. (Fig. 207 B.)



Fig. 208.—Gem from Mycenæ.

A few words may be added on the noble Lion Gate, so well known to us by the descriptions of English travellers of a century ago. The best general view I know is the coloured print of Dodwell, who also mentions that "the block of the lions is of a compact limestone of a green hue resembling in appearance the green basalt of Egypt." The examination of it by Thiersch showed that the heads of the lions had been pinned on in separate pieces, and that they faced outwards. Similar compositions are frequently found on early gems. (Figs. 208, 209.) Dr Evans has shown that the



Fig. 209.—Gem at South Kensington.

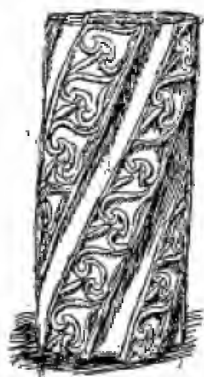


Fig. 210.—Fragment from Cyprus.

of a marble lamp.

composition was a sacred pillar standing on an altar, or rather two altars, guarded by lions, which are the companions of a pillar-idol, "the pillar of the House," the pillar of Mycenæ.

It was a symbol of the stability of the fortified city. "The scheme of the pillar and guardian monsters, as it appears on the Lion Gate, is essentially of Egyptian derivation." \*

There is in the Early Vase Room at the Museum a cast of a fragment of a small Mycenæan shaft decorated in a very similar way to the pillars of the Treasury of Athens. (Fig. 210.) It was found by the English exploring party at Enkomi, Cyprus, and comparisons show that it must be a portion Dr Evans found at Knossos such a large

\* J. H. S., 1901.

lamp made of similar rose-coloured marble; the top is an imitation of an Egyptian capital, with lotus-flowers and papyrus leaves. A similar lamp was found at Palaicastro, and resembles lamps still *in situ* at Hagiatriida.\* The Palaicastro lamp has a band of ornamentation almost exactly similar to the Enkomi shaft. This ornament seems, although the transformation cannot here be followed, to derive from the papyrus blossom. Amongst the many extraordinary fragments recently discovered at Knossos and other sites, not the least interesting is a painting showing a temple front with pillars like those of the Lion Gate. The horned objects by the pillars are altars within the cellas. (Fig. 211.)

\* Angelo Mosso.

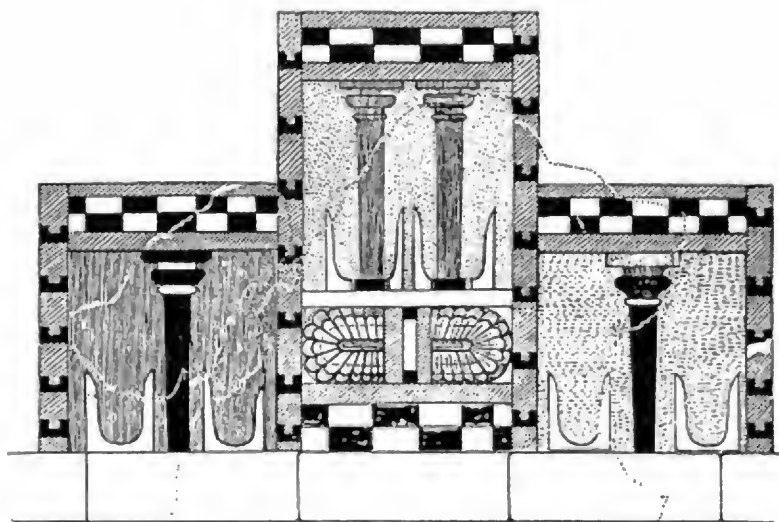


Fig. 211 A Temple Front, from a Painting at Knossos.

## APPENDIX.

### THE IONIC VOLUTE.

THE traditional explanation of the manner in which the Greeks set out the volute is given to us by Vitruvius, according to whom it was drawn by a series of arcs of circles gradually increasing in radius. The details of his scheme have been much discussed; one of the latest theories of interpretation is that of Choisy, as given by M. Pontremoli in the volume "Didymes."

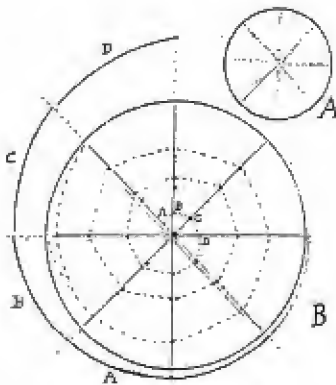


Fig. 212.—Eyes of Volute.  
A, Priene; B, Ephesus.

The late Mr Penrose, feeling as a mathematician that such a method was only an approximation to a true theoretic spiral, set out the theory that the volute was in fact drawn by means of a cord unwound from a central helix.\* If the cord is unwound from a cylinder a spiral having equal intervals is produced, but this differs from the volute in starting quickly from the eye, and in having succeeding revolutions what we may call parallel to one another. If, however, the cord is unwound from a spiral or

a cone an expanding volute results, which is almost exactly like the Ionic volute. Penrose thought further that the sunk eyes in the volutes were made to contain the helix from which the cord was unwound.

Other reasons for the excavation of the eye have been given,

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\* *R.I.B.A. Jour.*, 1903, p. 21.

and many fine capitals exist which have their volutes complete while the eyes are still unfinished. Amongst these is one of the Ephesus capitals, where the eyes are not only nearly 5 inches across but show lines of construction and compass marks which have often been pointed out. The late Prof. Middleton drew attention to the fact that similar lines might be traced on one of the Priene capitals. These are now very dim, and only under the electric light have I been able to verify the statement (Fig. 212 A).

Chandler reports that at Athens "we found an Ionic capital with marks of the compasses used in forming the volute."

We may bring Penrose's theory to bear on the elucidation of the marks on the Ephesus capital. On examination it will be found that many of the centre points on the eye fall into the course of a spiral, as suggested on Fig. 212 B. And if from the centres thus obtained arcs are successively struck, a spiral results which, I believe, agrees with the actual volute. I suggest, then, that the Greek method of constructing the volute was to draw four intersect-

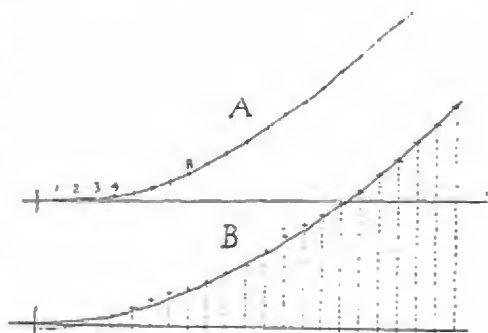


Fig. 213.—Dimensions of Volute set out on Ordinates from circumference of eye.

ing lines on the eye, then to sketch on it a rough spiral according to the number of revolutions required. The centres for successive arcs of circles were found at the intersection of this small and rude spiral with the eight radii. If the dimensions of a perfect spiral of this type are laid down on ordinates they should give a smooth parabolic curve. (Fig. 213 A.) As a matter of fact, at the Erechtheum the points do not give a smooth curve. (Fig. 213 B.)\* Probably the best way of designing a volute would be to sketch it as required, then to set out the dimensions on ordinates, then to "smoothe the curve," and from it to correct the volute.

\* I owe this observation to Mr P. Rodeck. On the diagram the points do not fall on the curve.



## THE ACANTHUS PILLAR.

Soon after the Corinthian capital came into use, a further development was made in the "acanthus pillar," an example of which has recently been found at Delphi. In Donaldson's

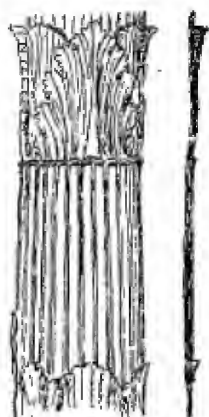


Fig. 214.—Acanthus Column, from a drawing by Donaldson.

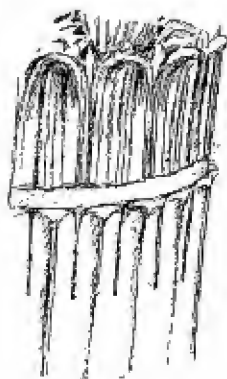


Fig. 215.—Detail of the Top of Shaft, Monument of Lysikrates.

sketches at the Institute of Architects, I find a drawing of a part of a similar pillar which was in a church at Athens. This was 1.3 in greatest diameter. (Fig. 214.) Now, one of the fragments



Fig. 216.—Sections of Flutings: A, Delphi Column; B, fragment said to be from Parthenon.

assigned by Michaelis to the acroterion of the Parthenon, of which there is a cast in the basement of the British Museum, is also of the same pattern, but smaller. It cannot, I think, by any possibility be so early as the Parthenon. The flutings of the acanthus pillar of Delphi finish under

each acanthus band in a series of leaf-like terminations, exactly like those of the Corinthian columns of the monument of Lysikrates, built in 335 B.C. (Fig 215.) The flutings of the

Delphi pillar are also of an elaborate section. (Fig. 216, A.) This section may be compared with that of the curved fragments assigned to the acroterion of the Parthenon. (Fig. 216, B.)

#### ARCHITECTS IN ANTIQUITY.

Large collections of material are available from which to draw an account of ancient architects.\* But I can only here deal broadly with the general facts of their training and standing. The Greek master may seem to have approximated more to the modern idea of an architect than did a master-mason of the Middle Ages in being a man of science and culture. It is all the more necessary to distinguish and ask what are the essential qualities of an architect? The training of the Greek must have been practical, and the architect must have begun as a mechanic, a mason, or a sculptor. The foundation craft was most generally, I believe, the last, although it is significant that in the list of the seven great architects is included Archimedes, the mathematician and military engineer. The modern conditions which make the modern architect are unique. Before the invention of penny posts, telegraphs, telephones, and copying presses, he could not be trained to their use, that is, *to office-work*; but it is evident that he must have had a training. The Greek architect could not have been what we call a professional man. Phidias, the sculptor, was, according to Plutarch, "director of all the public buildings, although the Athenians had other excellent architects. . . . He had the superintendence of everything, and all the artists received his orders." That is, as has been suggested, and as will appear more likely by what we shall see below, he was the city architect of Athens. Theodorus of Samos, the most famous sculptor of the archaic period, was architect of the Skias at Sparta and other works. His contemporary, Rhœcus, was architect of the temple of Hera at Samos. Bupalus of Chios, *c.* 500, was also a sculptor and architect. According to Furtwängler, Kallemachos was probably at once the architect and the sculptor of the Erechtheum. Polycleitos the younger

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\* See Brunn, "Gesch. d. Griech. Künstler"; Choisy's *Essays on Greek Building Accounts*; Daremberg and Saglio, vol. i.; Durm, vol. i.; the *American Architectural Record*, 1908.

was both architect and sculptor at Epidaurus. Scopas built the temple at Tegea, as well as sculpturing the splendid pedimental groups. The most famous architect at the middle of the fourth century, Pythios, the master at Priene and Halicarnassus, was the sculptor of the magnificent chariot group which surmounted the Mausoleum.

The more ancient and the great classical architects were, I should say, primarily sculptors. Later architects were primarily engineers. In Athens, Philon, the architect of the arsenal at the Piræus, of which practically a complete specification has come down to us, was classed in later times as one of the seven great architects, and we have seen that Archimedes was also named as one of them. Earlier, Hippodamus, architect of the fortified town of Piræus for Pericles and of the city of Rhodes, must have been an engineer. Later, Deinocrates, who laid out Alexandria, must also have been of this type.\*

As to their critical aspect toward their art we hear from Vitruvius how they wrote descriptions of their works and commentaries on architecture. Chersiphron, architect of the temple of Diana at Ephesus, wrote on it. Ictinos wrote on the Parthenon, and Pythios on the Mausoleum. Notwithstanding all this, Aristotle would not allow that architecture was a Fine Art—it was too much subject to mere need to come within his definition.

For the Roman period Vitruvius himself has left an invaluable document, although it is evident that the most essential commonplaces of procedure are assumed. He begins, indeed, by saying that architecture is a science based on practice and theory, but he neglects to say how practical knowledge was attained. He talks of studying philosophy, and of music and grammar, but never of learning building. On the other hand, he gives such sound advice that he must have been an excellent practical builder himself. In one crucial passage he says that architecture has three branches, building, dialling, and mechanics, the latter being the construction of war-engines and other machines, in which he seems to have been an expert, as he was keeper of

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\* See long lists of sculptor-architects and engineer-architects in Daremberg and Saglio, vol. i., p. 377. From a phrase cited from Plato, it appears that an architect might cost ten times as much as an ordinary workman. As to plans, see Darem. and Sag., s.v. *Forma*.

war-engines to the emperor. There is no doubt that there was a close association between the "engineer" and the architect. The "Ten Books of Architecture" falls into the three divisions just named. The first eight books are on building, including one on water supply, the ninth is on dialling, and the tenth is on machines. Apparently he was the author of only one important building. His vision was retrospective, and, for him, architecture was based on Greek precedents.

Whence came the change from the classical spirit which sought to realise perfect types, to the Roman spirit of adventure and aggrandisement? The change, of course, was general, and "in the air," but that which best qualified the architect to deal with it was his association with military engineering.

Vitruvius in his last chapter happens quite accidentally to mention three Greek architects who were concerned in the siege of Rhodes—Diognetus, architect of the city (who had a fixed annual salary), Callias, a rival, and Epimachus, a celebrated architect of Athens, who acted with the besiegers. He also mentions Trypho of Alexandria, architect of the city of Apollonia, who, he says, saved that city by his devices. Further, we know that the most famous master of the most celebrated group of buildings in Rome, Apollodorus of Damascus, the favourite architect of Trajan, was also his military engineer, who devised the wonderful bridge over the Danube, and who wrote a book on war-engines for Hadrian. A second great architect contemporary, or a little later, Decrianus, who removed the Colossus of the Sun to another position and built the bridge and Mausoleum of Hadrian, must also have been an engineer.

At a still later time, as the records show, Anthemius of Tralles, the architect of St Sophia, and other building masters of the Lower Empire were mechanics and engineers. Anthemius is called *mechanikos*. "He was an inventor of machines," we are told, and excelled in mechanical knowledge. He was employed on the fortifications of Dara.

Architects for public works were public servants (not the same thing as public servants calling themselves architects!). As late as the time of St Augustine, he mentions the city architect of Carthage, and Cassiodorus gives the form for appointing the *Architectus publicorum* of Rome.

## ORIGINS AND CONCLUSION.

On our page 196 has been mentioned the late entry into sanctioned "architecture" of that noblest building form, the dome. It is a commonplace that the arch and vault were not recognised in Greek "architecture." Yet these menial coverings of drains and stores were to become the master forces of a new architecture. It is a lesson for us that the dome, which originated in mud huts and beehive tombs, and was used in well coverings, kilns, and baths, and the like common necessities, only slowly came into higher structures, and then only as an *interior* form. Even in Roman architecture the conical exterior to the dome was general. The Pantheon is so much banked up at the springing that the external dome hardly counts.

It is the same whatever "features" we examine. That which is now "æsthetic architecture" was once organic building. How long do past and cast-off needs remain in consciousness as taste? Take the great typical moulding, the cornice. It was once, as Mr Flinders Petrie has shown, the spreading top of a fence of Egyptian réeds, plastered over with mud. Or it was the Doric eaves, made up of wall plate (bed mould), projecting rafter ends (mutules and corona), and terra-cotta gutter (cymatium). Again, Dr Dörpfeld has shown how that mysterious entity the Doric temple arose out of mud brick walls on a stone base course (orthostataæ), with wooden frames (antæ) and a surrounding protecting verandah (the peristyle), and so on.

Many years ago Champollion pointed out the resemblance between the Doric order of columns and some pillars found in Egypt, and the argument was carried further by Falkener in the "Museum of Classical Antiquities." Actual relation has been alternately asserted and denied; one of the grounds for the denial being the wide gap of time between early Doric architecture and the period of these Egyptian columns. The whole question is entirely altered by the establishment of Mycenæan art between the two. Certainly much of this art is of Egyptian derivation, and certainly also much of the Mycenæan was handed on in the Doric, as has been shown by Dörpfeld and others. There can be no doubt, I think, that the Doric order was in a large degree ultimately of Egyptian extraction, and



that the Ionic is Egypto-Assyrian. Their power is in this—that they were never “designed,” but developed slowly from a far ancestry. The essence of Greek art is not in these mere shapes accidentally derived, but in the spirit of clearness, order, and exquisiteness in which they were dealt with.

The normal course of architectural development has been through need, local possibilities, experiment—that is the period of infancy: to custom, mastery, expansion, and maturity: into rules, and then intentional variations, redundancy, æstheticism, incoherence, and decline.

While Greek “sanctioned architecture,” the ideal of Vitruvius, was declining, the Roman building art arose. Later architecture was again and again renewed in Byzantine, Romanesque, and mediæval *building adventure*, as in modern days it is being renewed outside the realm of “taste” by fresh needs and engineering experiment—the basis of the architecture of to-morrow.

My study of the old has had for its object the discovery of the conditions of the new.

“Nothing comes of its own accord to men, but all things by experiment.” \*

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\* Herodotus.

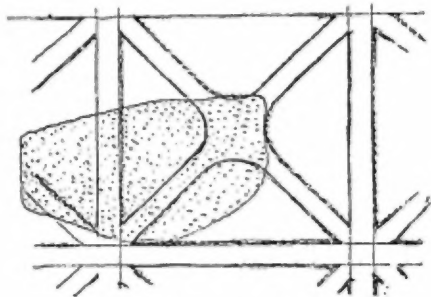


Fig. 217.—Fragment of Slab with Lattice Pattern, from Athens, in South Kensington Museum.

CATALOGUED.

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